

Figure 10B

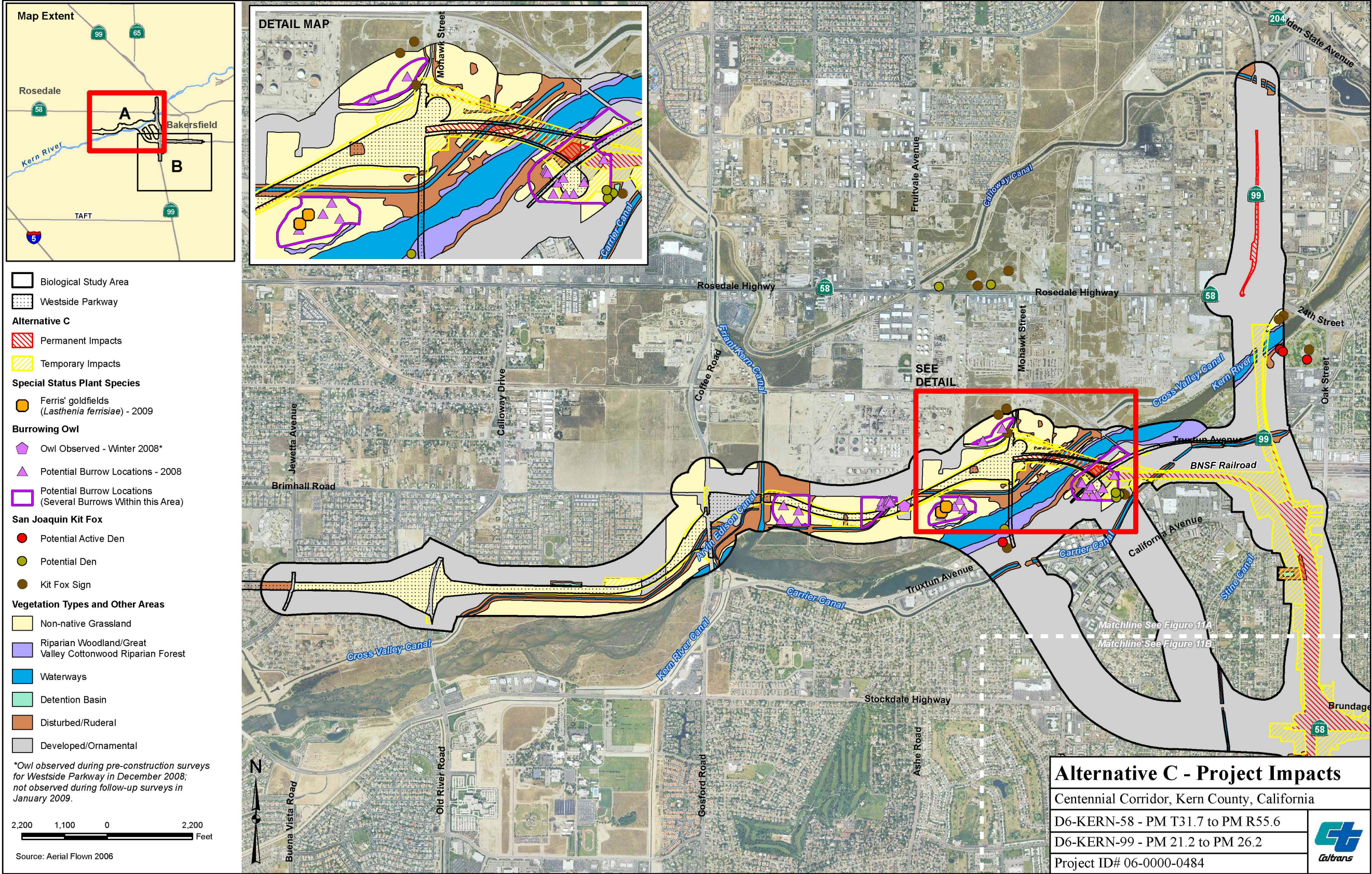


Figure 11A

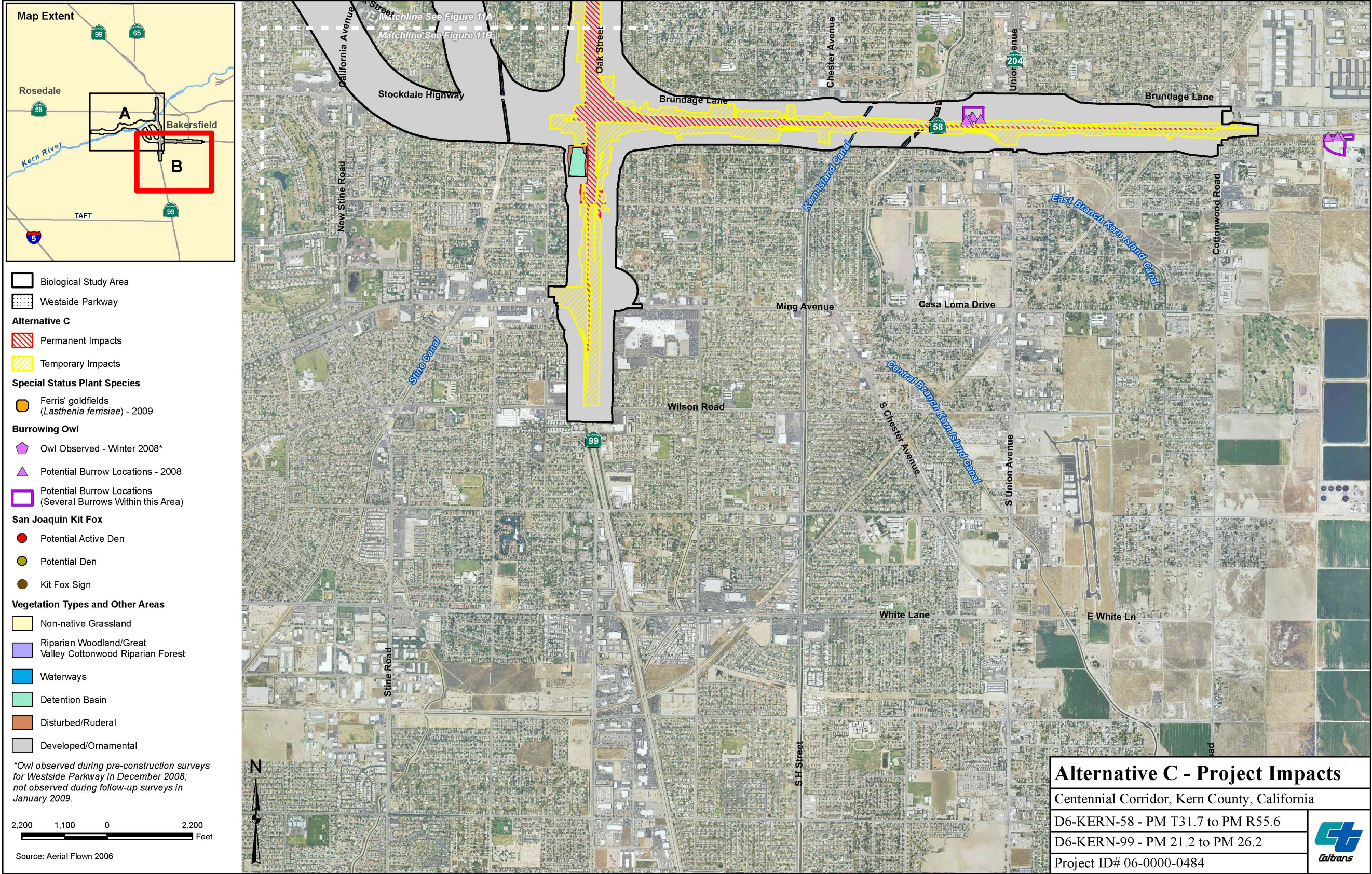


Figure 11B

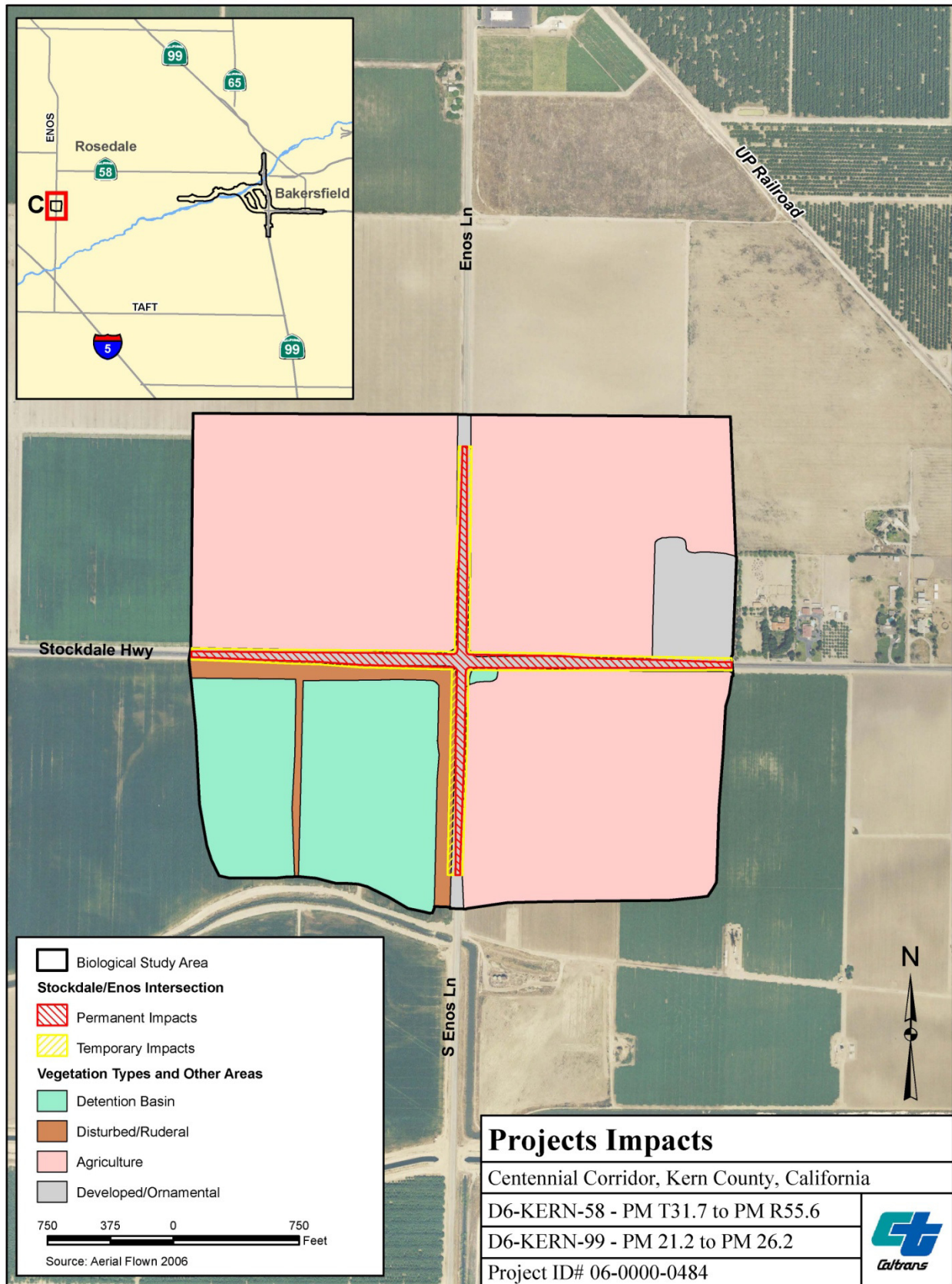


Figure 12

4.1. Natural Communities of Special Concern

Special-status natural communities reported from within 10 miles of the biological study area include coastal and valley freshwater marsh, Great Valley cottonwood riparian forest, Great Valley mesquite scrub, stabilized interior dunes, valley sacaton grassland, valley saltbush scrub, and valley sink scrub (CDFG 2009, 2011). Most of these vegetation types are not present within the biological study area; however, approximately 39.92 acres of riparian woodland/Great Valley cottonwood riparian forest occur in the study area.

No other vegetation types are discussed in this section because they are not considered special status.

4.1.1. Discussion of Riparian Woodland/Great Valley Cottonwood Riparian Forest

4.1.1.1. SURVEY RESULTS

In total, 39.92 acres of riparian woodland/Great Valley cottonwood riparian forest occur in the biological study area. Some of these areas are under the jurisdiction of the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and/or Regional Water Quality Control Board (see Discussion of Jurisdictional Waters, Section 4.2). Riparian woodland/Great Valley cottonwood riparian forest is one of the highest quality vegetation types in the area because it provides habitat for special-status wildlife species that occur or potentially occur in the biological study area. Also, it is located along the Kern River, which provides a wildlife movement corridor for special-status wildlife species, including the San Joaquin kit fox.

4.1.1.2. IMPACTS

Alternative A would impact 3.54 acres (0.35 acre permanent; 3.19 acres temporary); Alternative B would impact 1.84 acre (0.00 acre permanent, 1.84 acre temporary); and Alternative C would impact 1.42 acres (0.00 acre permanent, 1.42 acres temporary). The improvements at Stockdale Highway and State Route 43 would not impact any riparian woodland/Great Valley cottonwood riparian forest.

4.1.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Riparian woodland/Great Valley cottonwood riparian forest adjacent to the proposed impact area will be protected from inadvertent disturbance by construction equipment and/or personnel, thus protecting plants and wildlife in the habitat adjacent to the impact area. Before grading and/or construction-related activities within 50 feet of areas under the jurisdiction of the U.S. Army Corps of Engineers, Regional Water

Quality Control Board, and the California Department of Fish and Wildlife, the contractor will install fencing or flagging to delineate the jurisdictional areas as an environmentally sensitive area. Placement of the fencing will be done under the supervision of a qualified biologist. All personnel and equipment access to the environmentally sensitive area will be prohibited unless approved by a qualified biologist.

4.1.1.4. COMPENSATORY MITIGATION

Prior to initiation of construction, Caltrans shall coordinate with and obtain necessary permits from the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Regional Water Quality Control Board regarding compensation for impact to jurisdictional habitat. The mitigation approach will be negotiated with the resource agencies and will consist of one or a combination of the following: 1) purchase of credits at a jurisdictional waters mitigation bank; 2) enhancement of jurisdictional waters; 3) restoration of jurisdictional waters; or 4) purchase of existing jurisdictional waters and placing a conservation easement over it.

4.2. Jurisdictional Wetlands and “Waters of the U.S.”

This section discusses wetlands, “Waters of the U.S.”, and “Waters of the State” regulated by the U.S. Army Corps of Engineers, the California Department of Fish and Wildlife, and the Regional Water Quality Control Board.

4.2.1. Discussion of Potentially Jurisdictional Wetlands and “Waters of the U.S.”

Wetlands are defined as areas of land that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support—and that under normal circumstances do support—a prevalence of vegetation typically adapted for life in saturated soil conditions. To regulate activities in wetlands, federal and state agencies have developed specific definitions and methods for identifying wetland boundaries. Identification methods, which vary among the agencies, focus on hydrologic, soil, and vegetative parameters. For sites to be identified as wetlands, they must have specific indicators of wetland conditions for each of these three parameters. Areas that contain some but not all three parameters are considered “Waters of the U.S.” (which are regulated by the U.S. Army Corps of Engineers) and “Waters of the State” (which are regulated by the California Department of Fish and Wildlife). A complete discussion of these terms and the agency regulation associated with them is included in the Jurisdictional Delineation Report (BonTerra Psomas 2015, Appendix E).

Several sites within the biological study area present special challenges for determining U.S. Army Corps of Engineers jurisdiction. These areas include irrigation canals and spreading basins. U.S. Army Corps of Engineers jurisdiction includes realigned channels of natural drainages and well-defined stream courses that lie below the plane of the ordinary high water line. Channels, irrigation canals, and artificial sump ponds that are abandoned are regulated by the U.S. Army Corps of Engineers if they establish a self-sustaining wetland community.

4.2.1.1. SURVEY RESULTS

A jurisdictional delineation was done in 2008, updated in November 2011 to include additional areas, and updated in August 2014 to reflect post-construction conditions in the vicinity of Westside Parkway (BonTerra Psomas 2015, Appendix E). Areas along the Kern River, canals, and within detention basins were found to be jurisdictional. In total, 135.763 acres of “Waters of the U.S.,” of which 0.195 acre is wetlands, are present in Segment 1 of the biological study area. In addition, 4.413 acres of isolated waters (detentions basins) are present in Segment 1 of the biological study area. And 182.237 acres of “Waters of the State” are present in Segment 1 of the biological study area.

4.2.1.2. IMPACTS

Impacts on jurisdictional areas were determined by comparing engineering plans with maps of jurisdictional resources. Permanent structural impacts are those that would result from the bridge structure. Permanent shade impacts would result from the shadow that the widened bridge would cast based on the engineer’s projections. Temporary impacts are those that include the area needed to build the bridge, which includes construction access, maneuvering, and staging.

The project would impact areas under the jurisdiction of the U.S. Army Corps of Engineers and the Regional Water Quality Control Board. Alternative A would impact 5.725 acres of “Waters of the U.S.” (0.913 acres permanent, 4.812 acres temporary), including 0.009 acre of temporary wetlands impact (Figures 13A–13D). Alternative B would impact 4.432 acres of “Waters of the U.S.” (0.009 acre permanent, 4.423 acres temporary), it would not impact any wetlands (Figures 14A–14D). Alternative C would impact 7.475 acres of “Waters of the U.S.” (0.538 acre permanent, 6.937 acres temporary), it would not impact any wetlands (Figures 15A–15E). There would be no jurisdictional impacts due to the intersection improvements at Stockdale Highway and State Route 43. In addition, Alternative B would permanently impact 0.009 acre of isolated waters and Alternative C would

temporarily impact 0.972 acre of isolated waters under the jurisdiction of the Regional Water Quality Control Board. Impacts on each U.S. Army Corps of Engineers and Regional Water Quality Control Board jurisdictional feature are shown in Table 6.

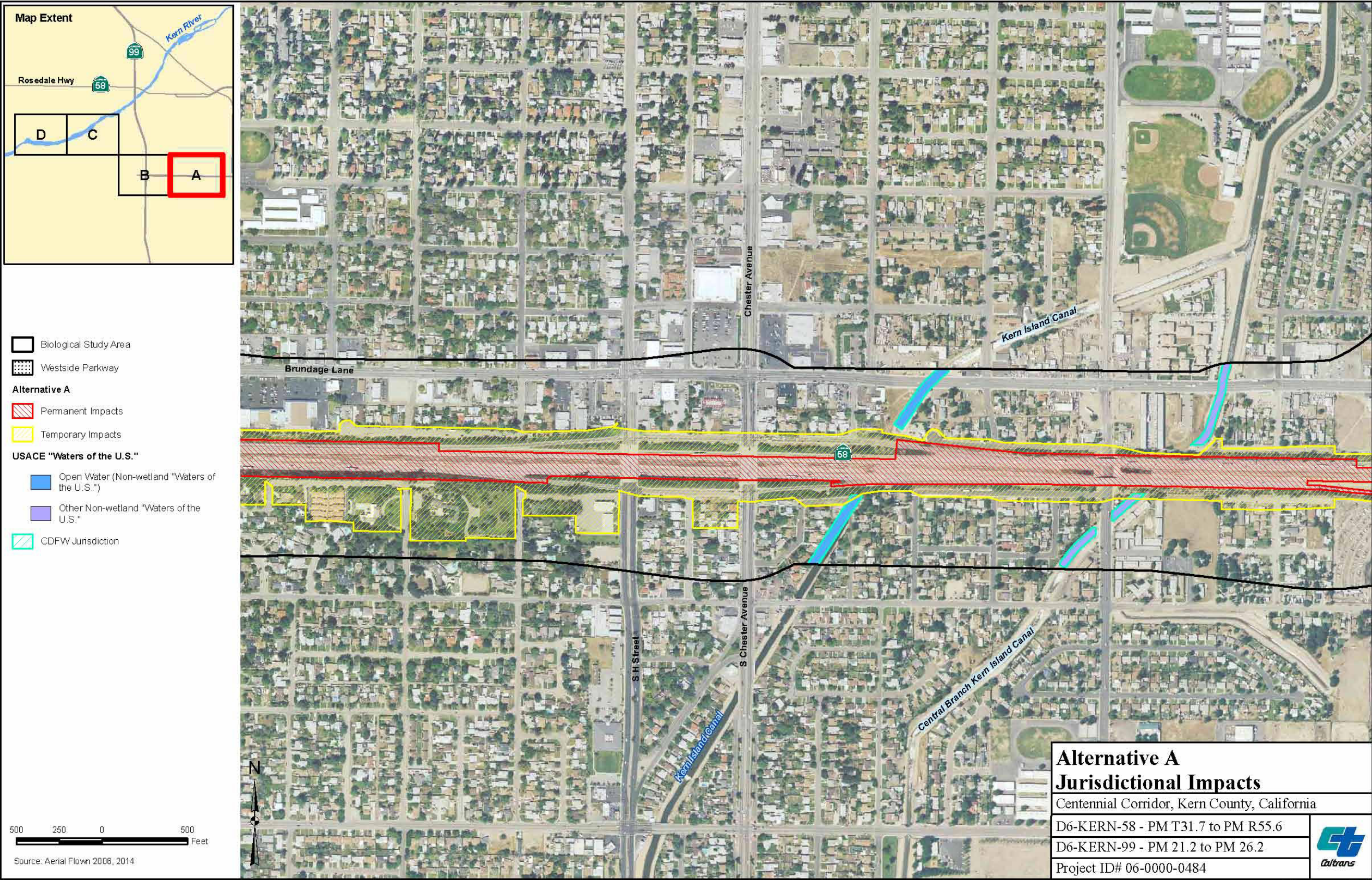
The project would also impact areas under the jurisdiction of the California Department of Fish and Wildlife. Alternative A would impact 15.174 acres of “Waters of the State” (4.182 acres permanent structural, 10.992 acres temporary construction, and 3.108 acres permanent shade¹) (Figure 13A–13D). Alternative B would impact 6.049 acres of “Waters of the State” (0.189 acre permanent structural, 5.860 acres temporary construction, and 2.518 acres of permanent shade) (Figure 14A–14D). Alternative C would impact 11.417 acres of “Waters of the State” (0.630 acres permanent structural, 10.787 acres temporary construction, and 1.619 acre permanent shade) (Figure 15A–15E). None of the alternatives would impact the jurisdictional areas at Stockdale Highway and State Route 43 (Figure 16). Impacts on each California Department of Fish and Wildlife jurisdictional feature are shown in Table 7.

4.2.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Jurisdictional areas (riparian woodland/Great Valley cottonwood riparian forest, waterways, and detention basins) adjacent to the proposed impact area shall be protected from inadvertent disturbance by construction equipment and/or personnel, thus protecting plants and wildlife in the habitat next to the impact area. Before grading and/or construction-related activity within 50 feet of areas under the jurisdiction of the U.S. Army Corps of Engineers, the Regional Water Quality Control Board, and/or the California Department of Fish and Wildlife, the contractor shall install fencing or flagging to delineate the jurisdictional areas as an environmentally sensitive area. Placement of the fencing shall be done under the supervision of a qualified biologist. All personnel and equipment access to the environmentally sensitive area shall be prohibited unless approved by a qualified biologist.

Additional avoidance and minimization measures may be required by the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Regional Water Quality Control Board.

¹ Permanent shade impacts are due to the presence of a bridge, which is included for the Kern River (all alternatives), Carrier Canal (Alternative B), Friant-Kern Canal (Alternatives A and C), and Stine Canal (Alternative B). This shaded area would also be temporarily impacted during construction. The shade and temporary construction impacts are not counted twice in the total impact numbers.



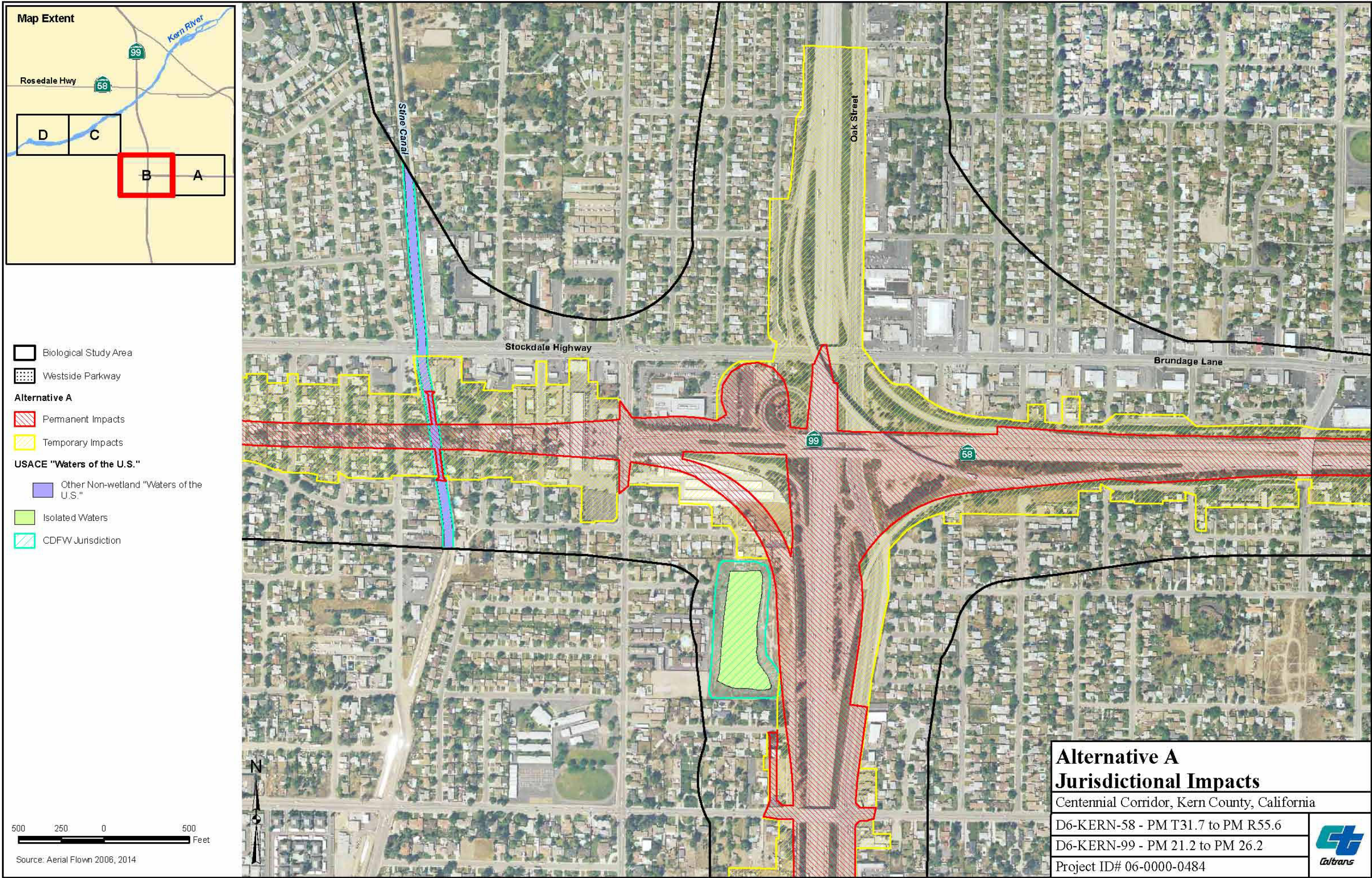


Figure 13B

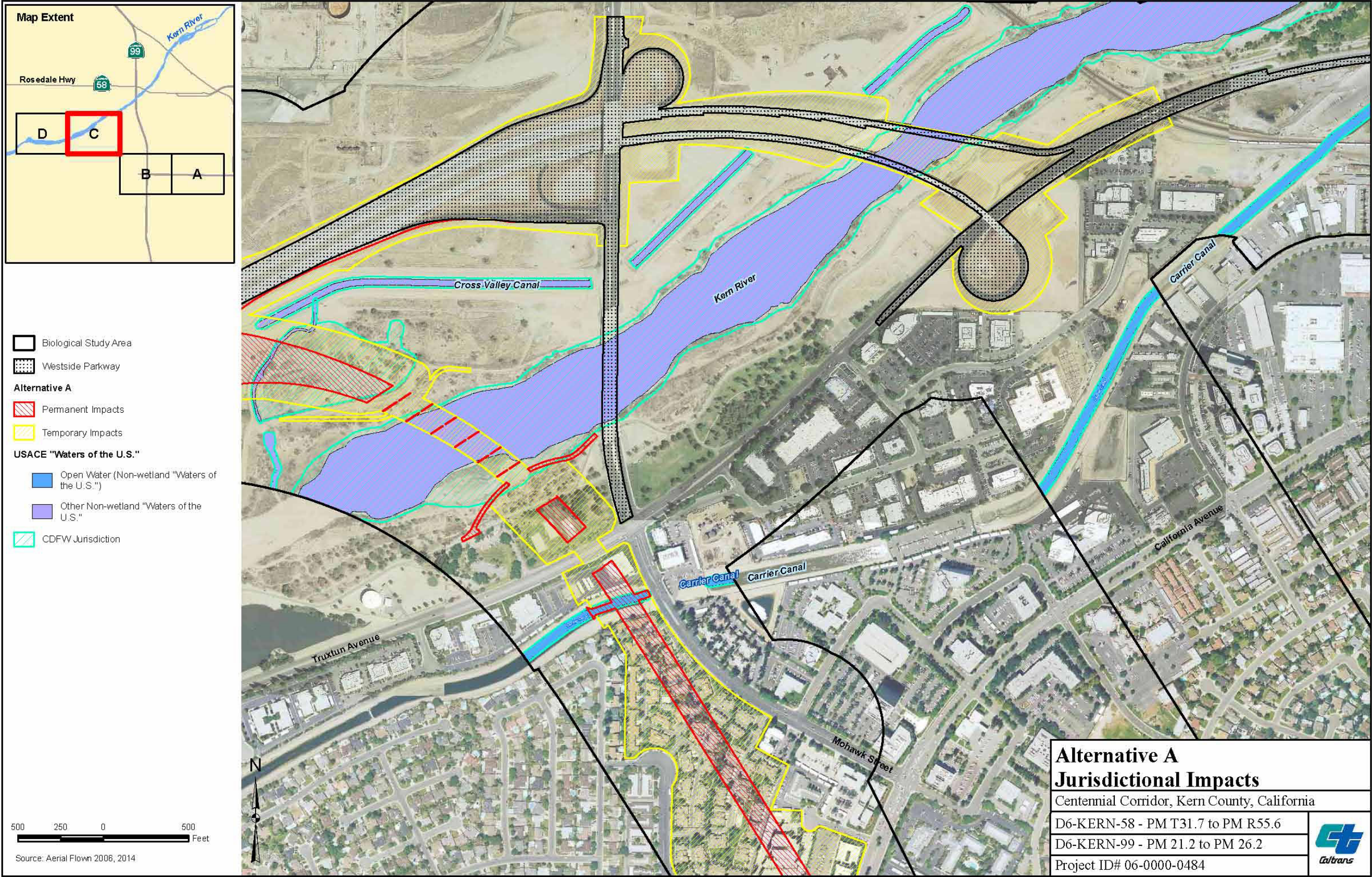
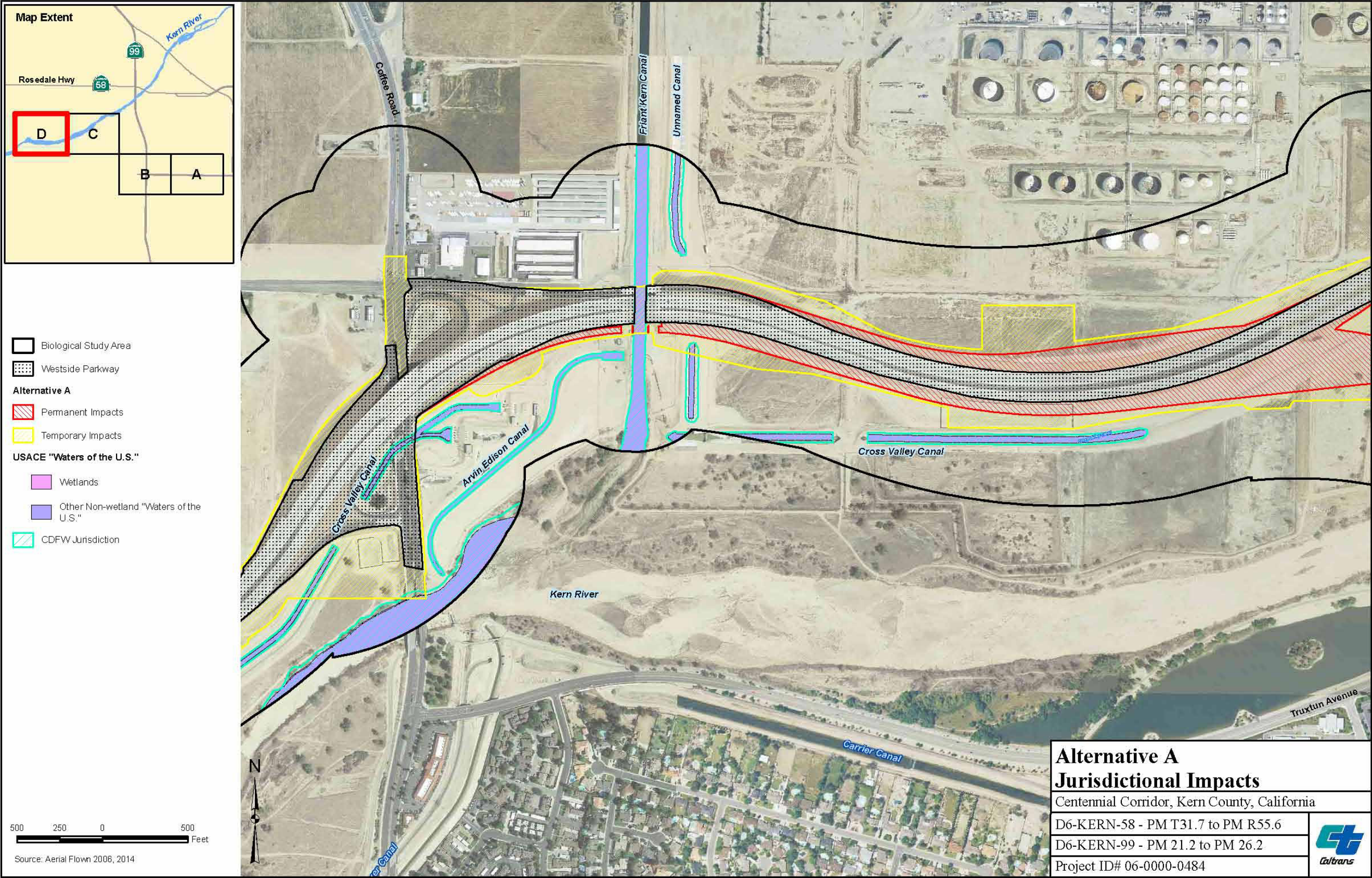


Figure 13C



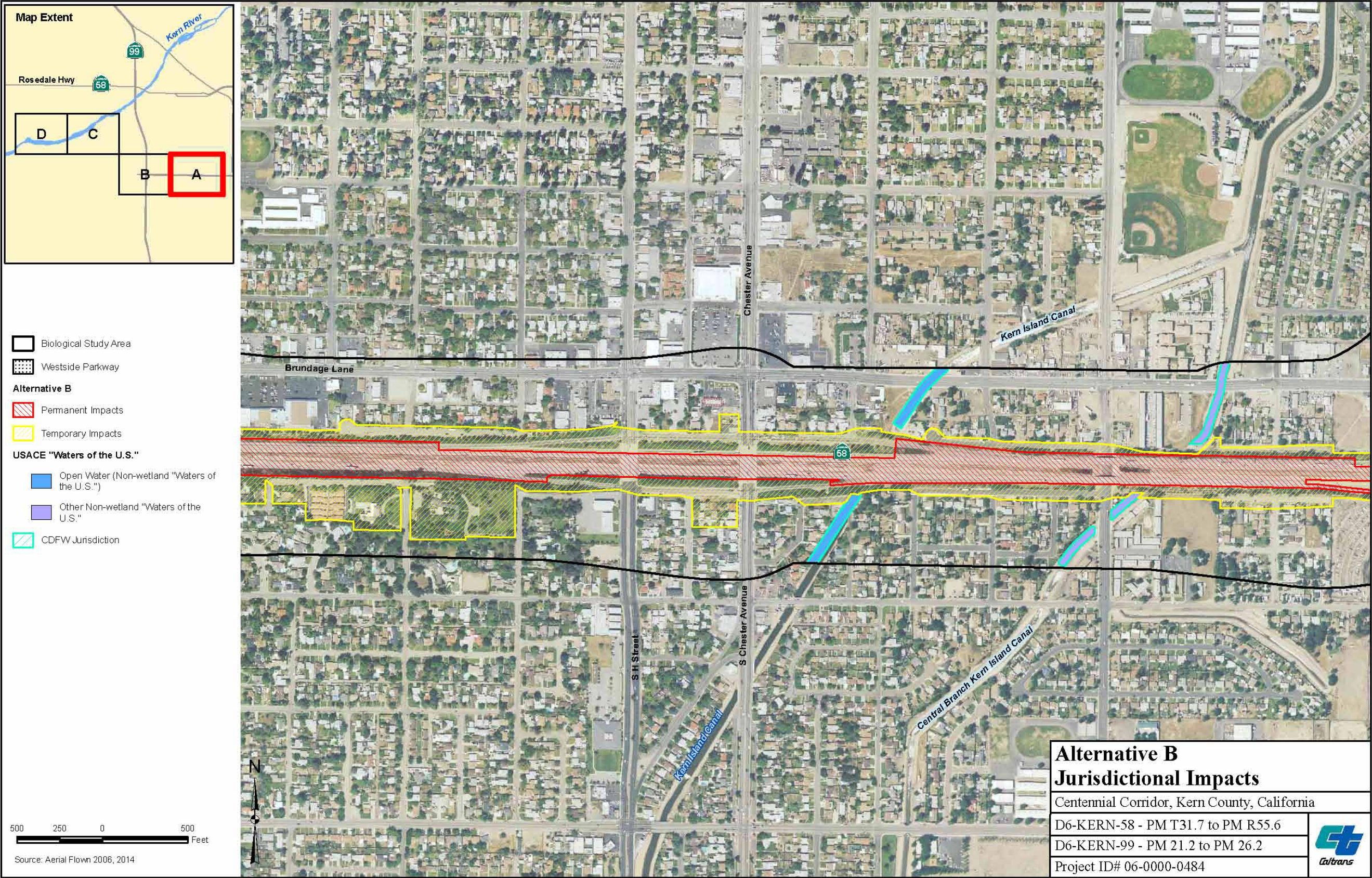


Figure 14A

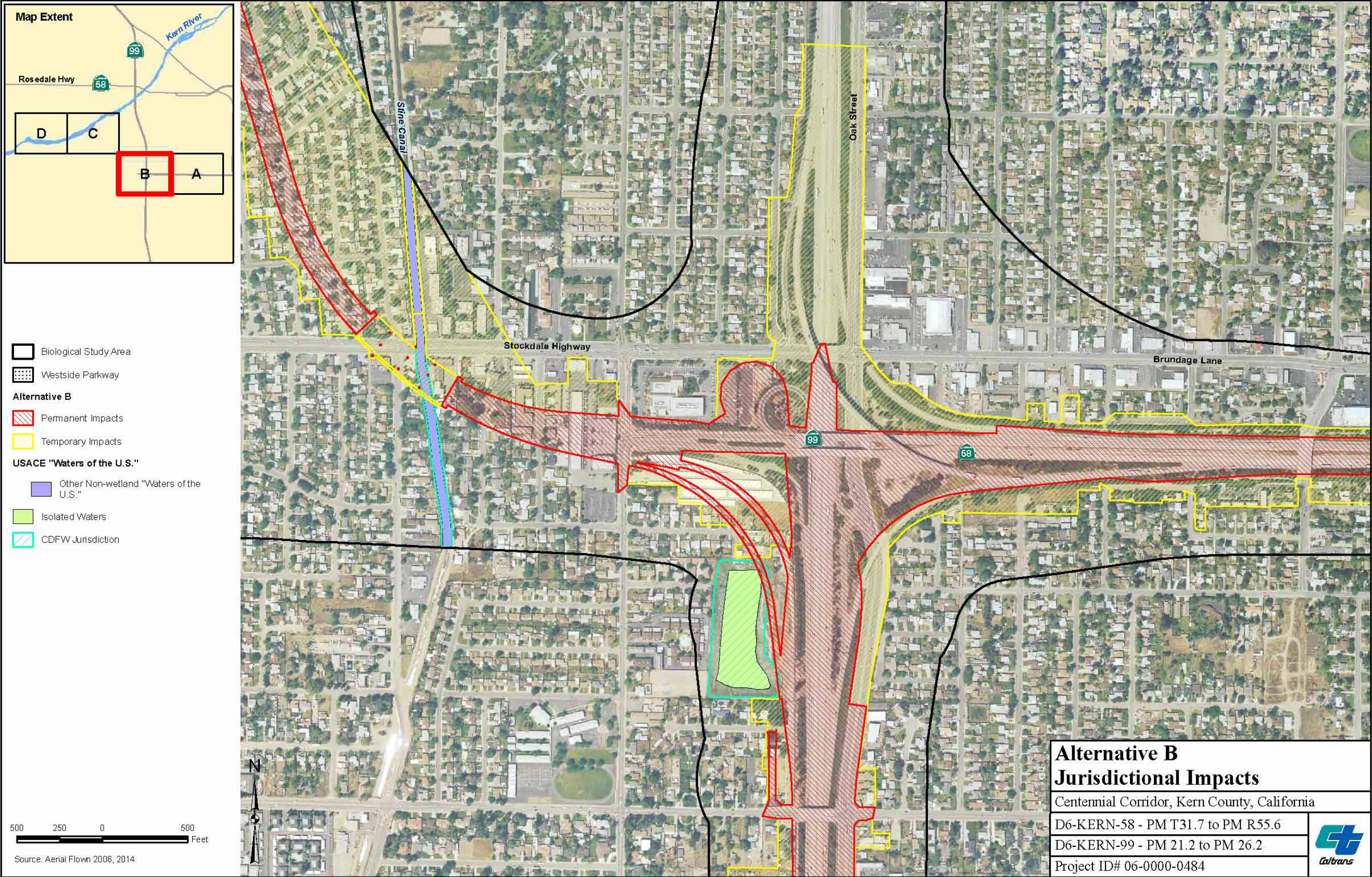


Figure 14B

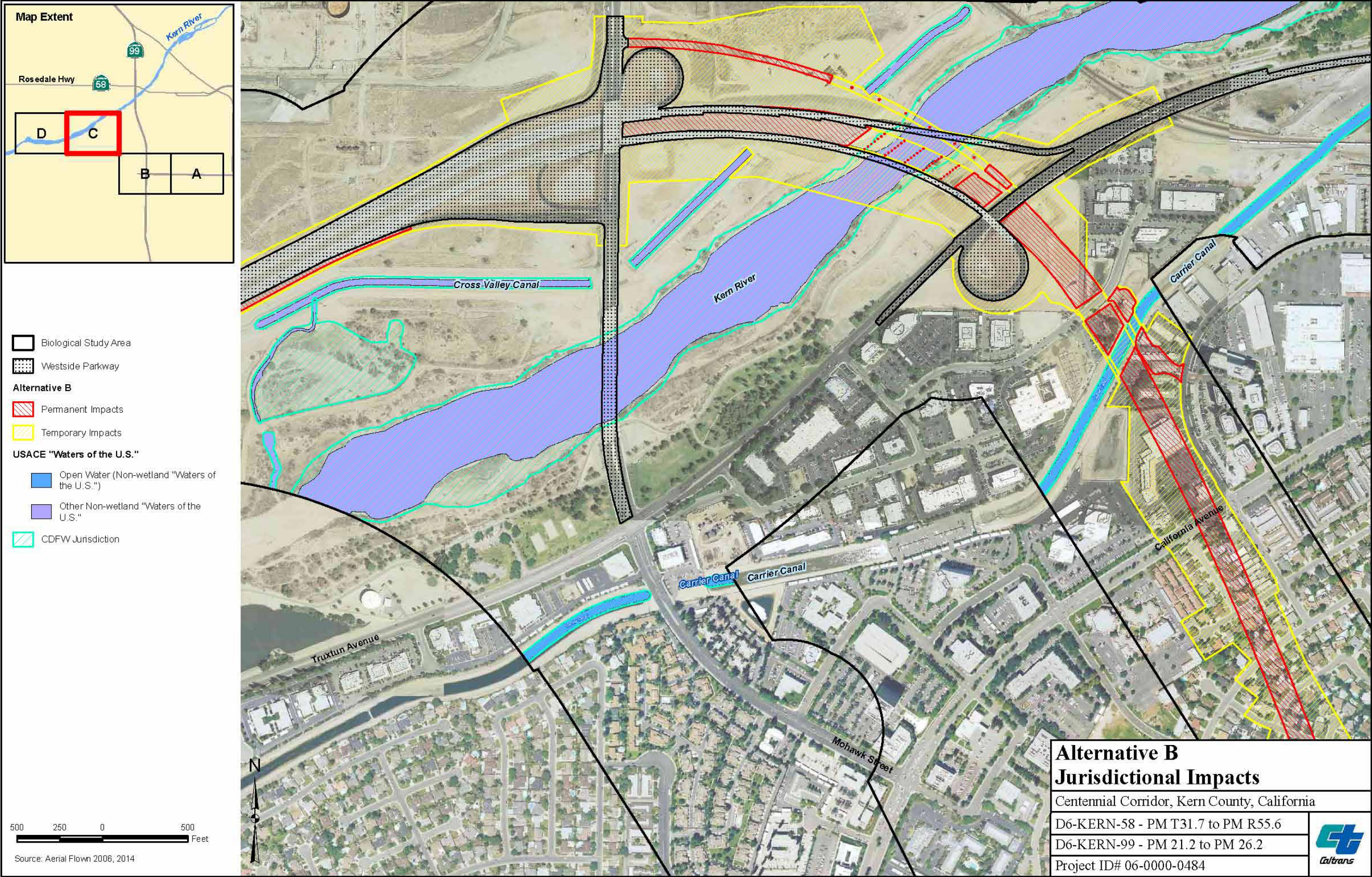


Figure 14C

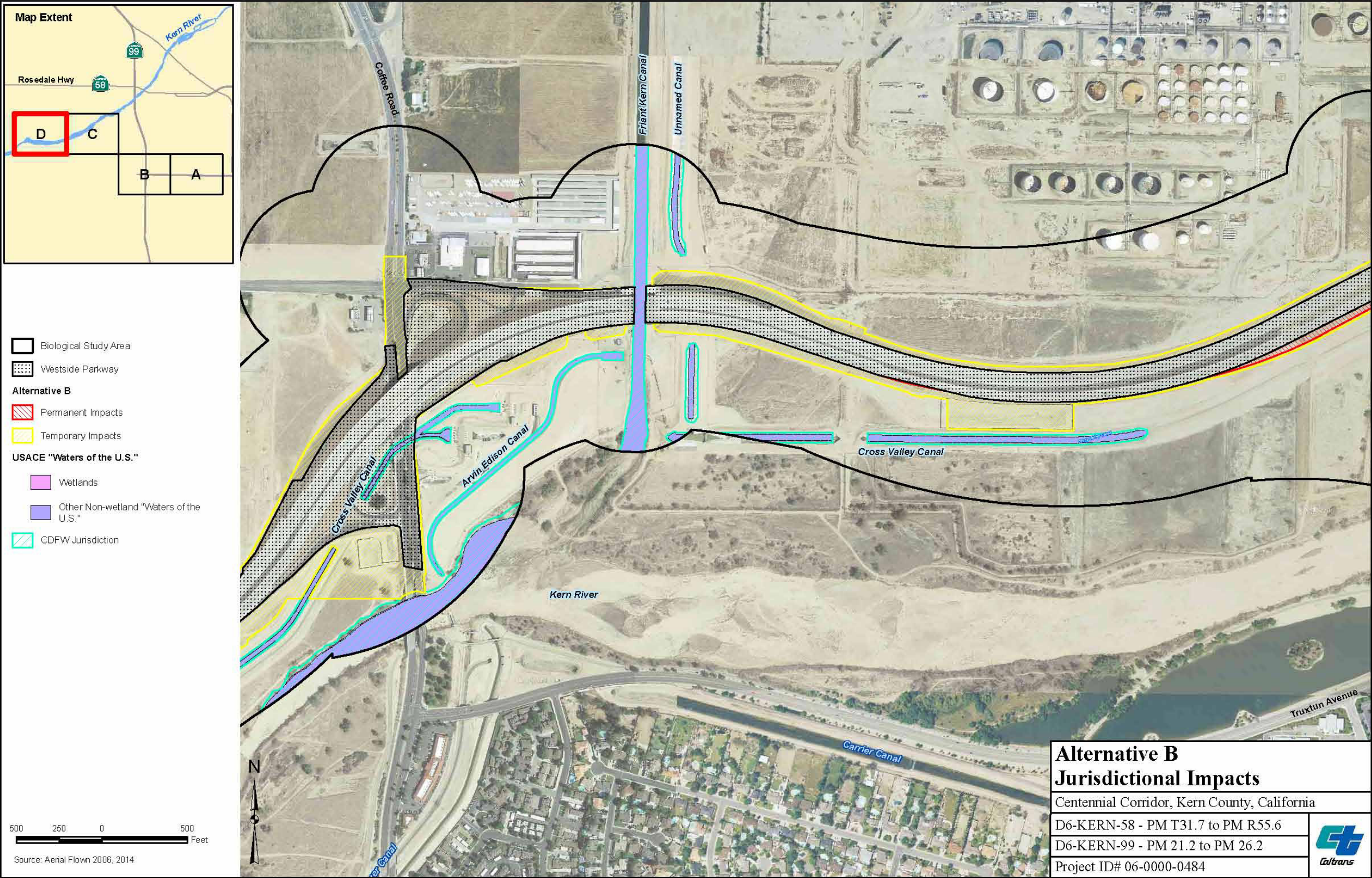


Figure 14D

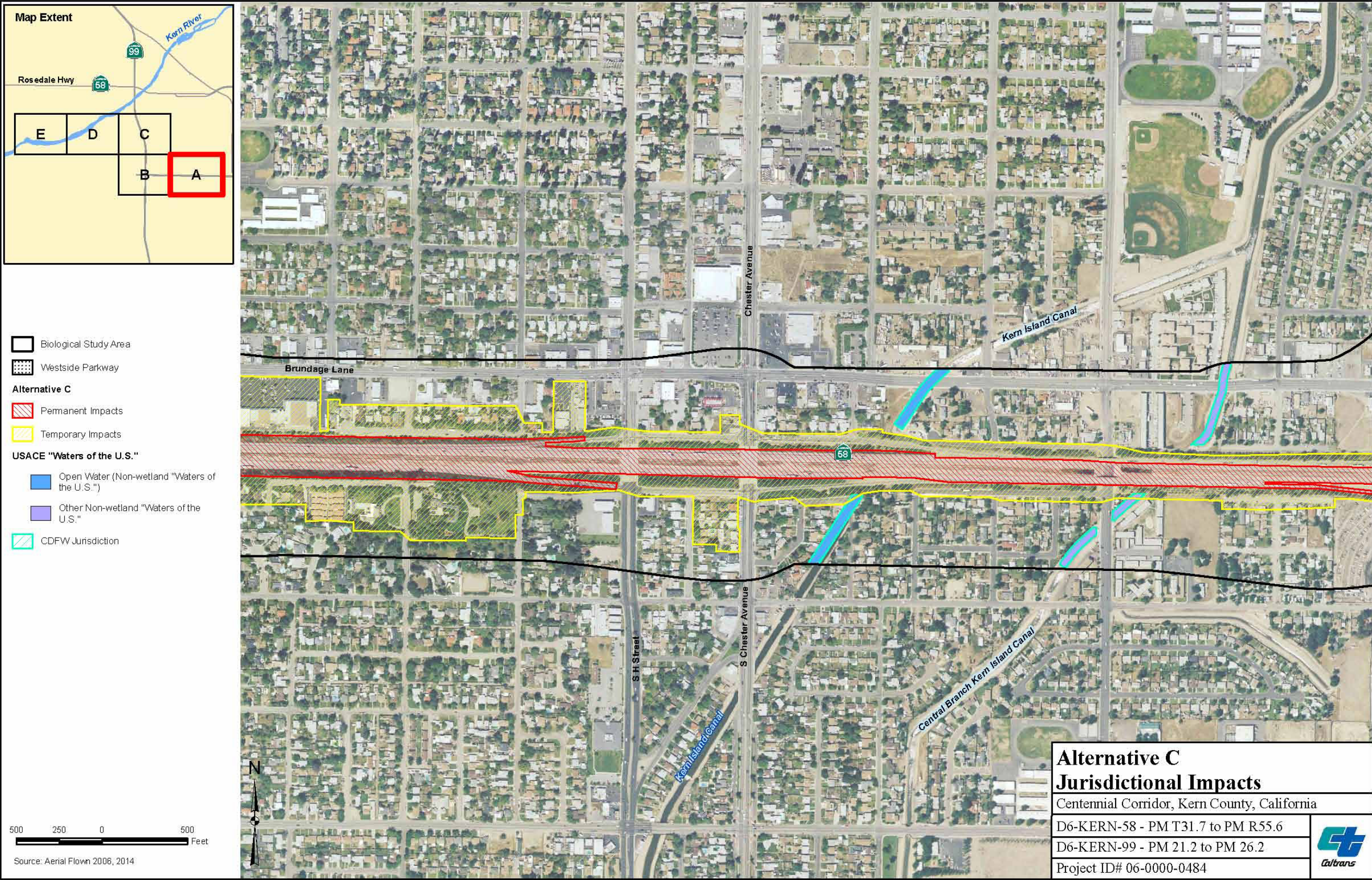


Figure 15A

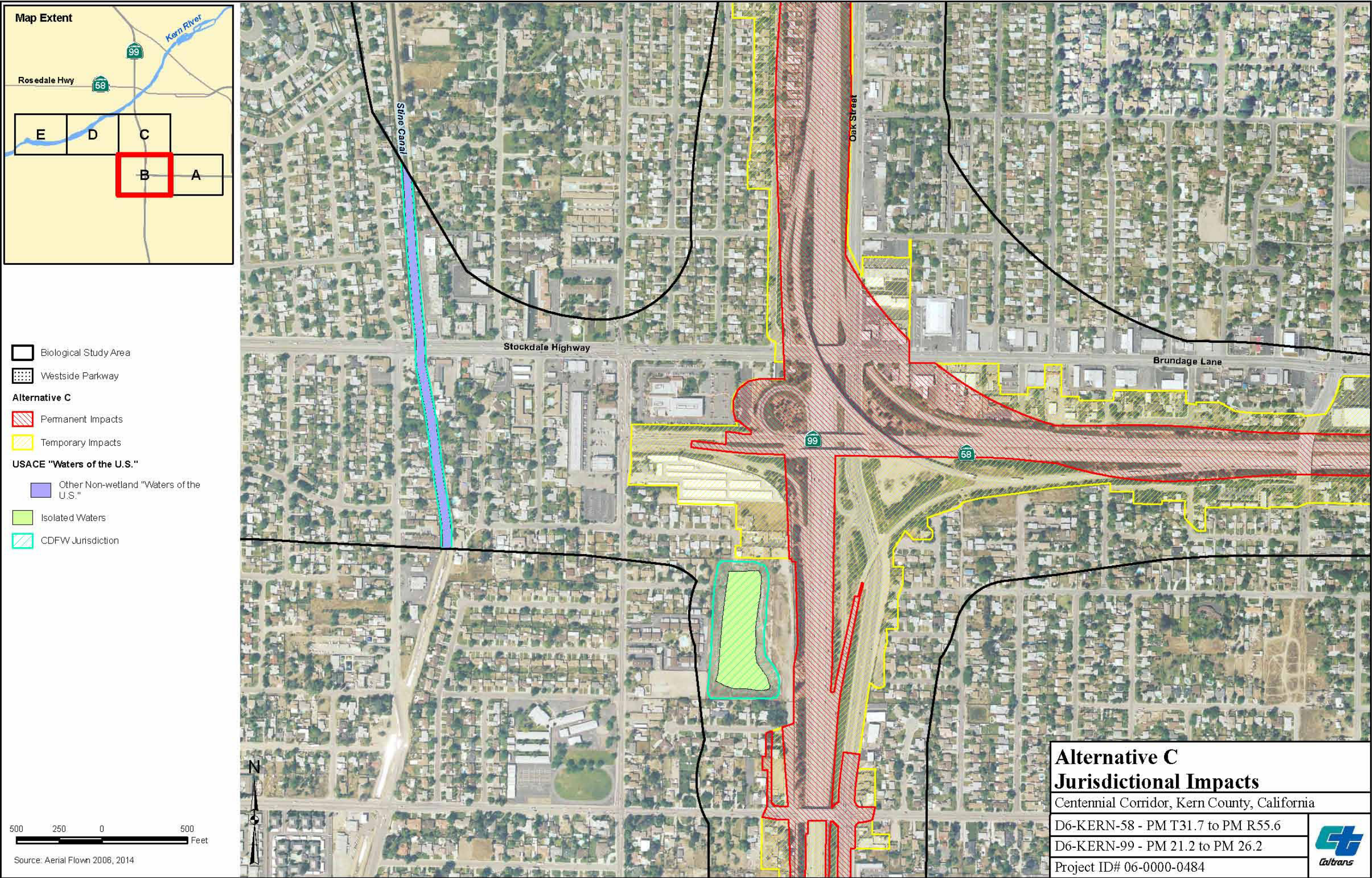
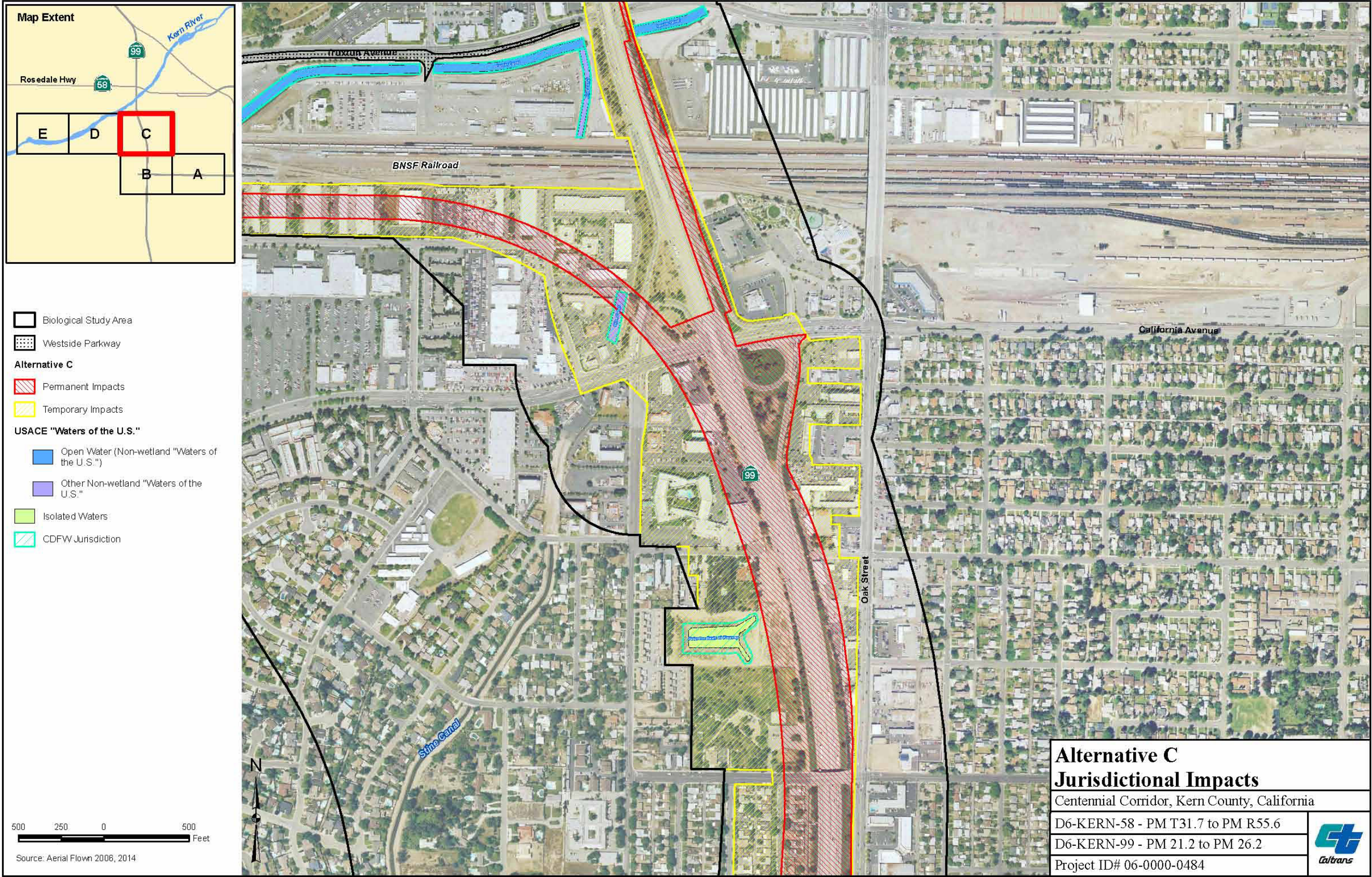


Figure 15B



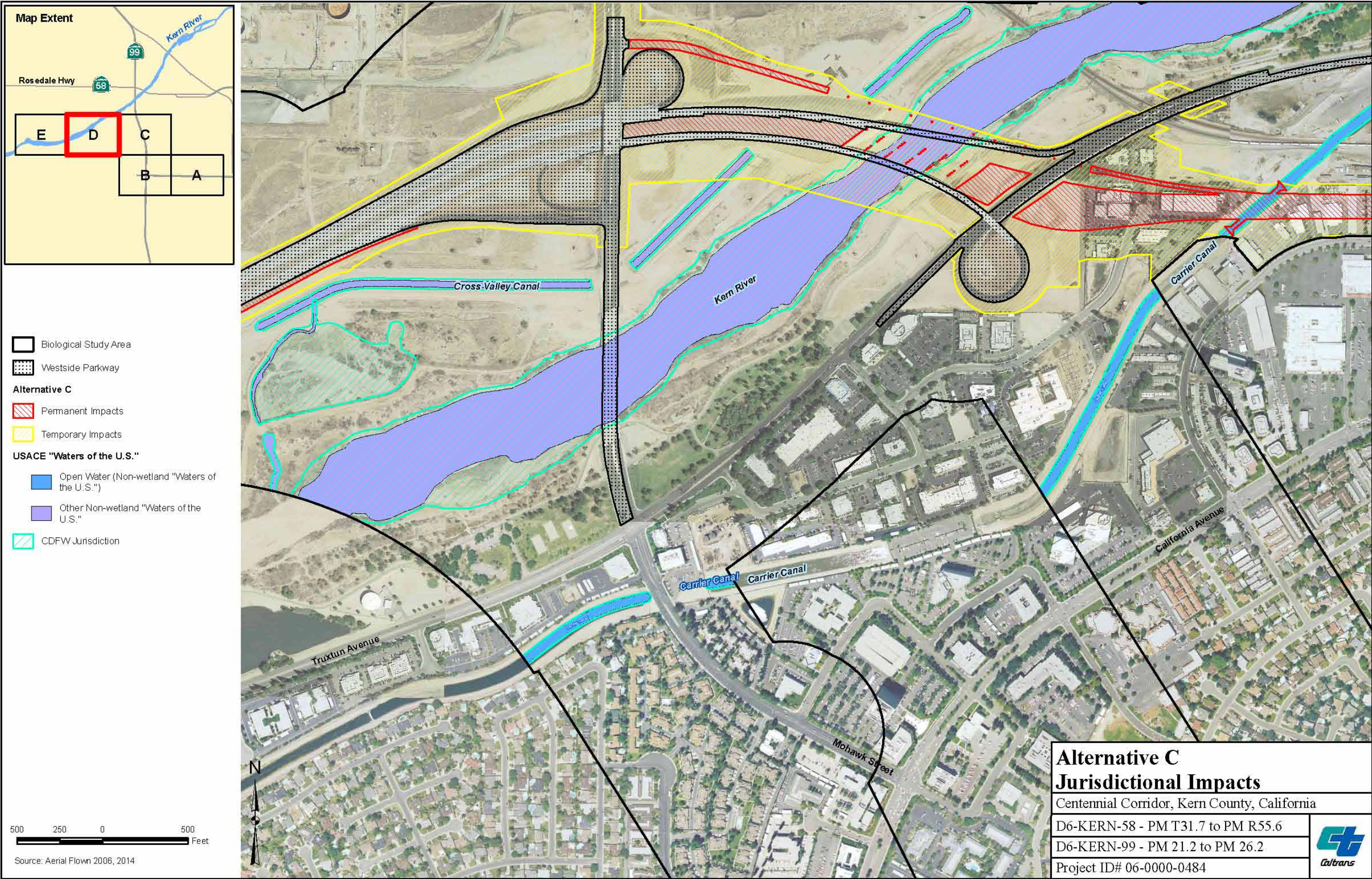


Figure 15D

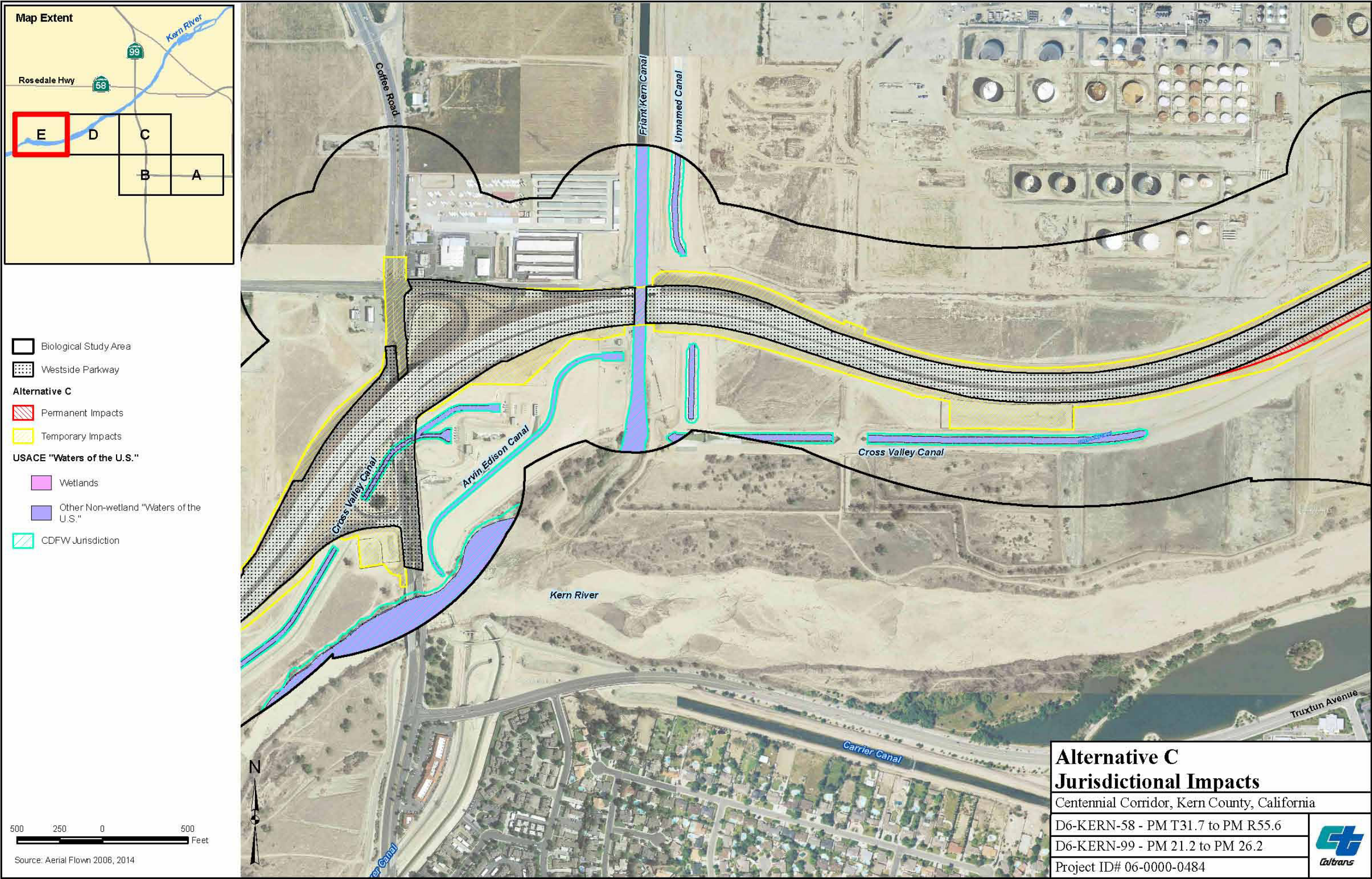


Figure 15E

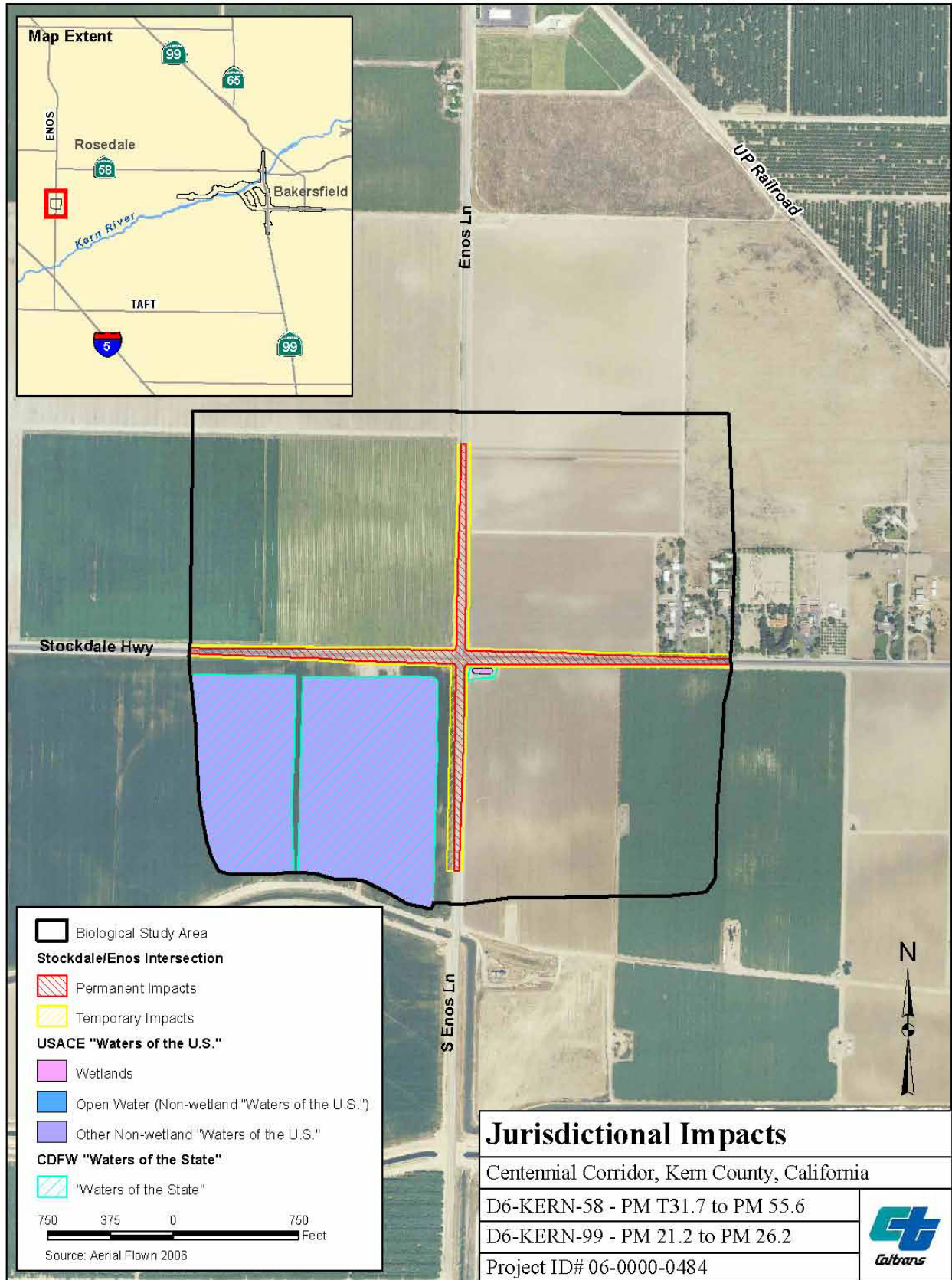


Figure 16

**Table 6 Waters Under the Jurisdiction of the
U.S. Army Corps of Engineers and Regional Water Quality Control Board That Would be Impacted by the Project**

Waters of the U.S.	Existing (Acres)	Permanent Structural Impact (Acres) ^a			Temporary Construction Impact (Acres) ^b			Total Impacts (Acres)		
		Alternative A	Alternative B	Alternative C	Alternative A	Alternative B	Alternative C	Alternative A	Alternative B	Alternative C
Kern River										
Wetlands	0.112	0.000	0.000	0.000	0.009	0.000	0.00	0.009	0.000	0.000
Other Waters	68.740	0.144	0.009	0.022	3.541	3.421	5.980	3.685	3.430	6.002
Arvin-Edison Canal										
Other Waters	0.924	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calloway Canal										
Other Waters	2.312	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Carrier Canal										
Open Water	6.786	0.365	0.000	0.389	0.051	0.418	0.154	0.416	0.418	0.543
Central Branch Kern Island Canal										
Other Waters	0.938	0.000	0.000	0.000	0.044	0.000	0.044	0.044	0.000	0.044
Cross Valley Canal										
Other Waters	8.977	0.00	0.000	0.00	0.258	0.000	0.195	0.258	0.000	0.195
Friant-Kern Canal										
Other Waters	3.058	0.000	0.000	0.000	0.409	0.000	0.333	0.409	0.000	0.333
Kern Island Canal										
Open Water	1.051	0.000	0.000	0.000	0.020	0.000	0.020	0.020	0.000	0.020
Stine Canal										
Other Waters	3.251	0.404	0.000	0.127	0.436	0.584	0.211	0.840	0.584	0.338
Unnamed Canal										
Other Waters	0.732	0.000	0.000	0.000	0.044	0.000	0.000	0.044	0.000	0.000
Detention Basins										
Isolated Waters ^c	4.413	0.000	0.009	0.000	0.000	0.000	0.972	0.000	0.009	0.972
Stockdale Highway and State Route 43										
Wetlands	0.083	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Waters	38.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total RWQCB	140.176	0.913	0.018	0.538	4.812	4.423	7.909	5.725	4.441	8.447
Total USACE	135.763	0.913	0.009	0.538	4.812	4.423	6.937	5.725	4.432	7.475
^a Temporary impacts refer to construction access and staging areas; the temporary impact includes the areas under the bridges that will be accessed during construction.										
^b Permanent structural impacts are due to proposed structures.										
^c Isolated waters are within the jurisdiction of the Regional Water Quality Control Board but are not under the jurisdiction of the U.S. Army Corps of Engineers.										

**Table 7 Waters Under the Jurisdiction of the
California Department of Fish and Wildlife That Would Be Impacted by the Project**

Waters of the State	Existing (Acres)	Temporary Construction Impact (Acres) ^a			Permanent Structural Impact (Acres) ^b			Permanent Shade Impact (Acres) ^c			Total Impacts (Acres)		
		Alt. A	Alt. B	Alt. C	Alt. A	Alt. B	Alt. C	Alt. A	Alt. B	Alt. C	Alt. A	Alt. B	Alt. C
Kern River	96.054	9.268	4.705	7.881	3.333	0.013	0.032	2.692	1.495	1.619	12.601	4.718	7.913
Arvin-Edison Canal	1.158	0.000	0.000	0.000	0.000	0.000	0.000	N/A	N/A	N/A	0.000	0.000	0.000
Calloway Canal	3.630	0.000	0.000	0.000	0.000	0.000	0.000	N/A	N/A	N/A	0.000	0.000	0.000
Carrier Canal	8.153	0.088	0.454	0.204	0.410	0.000	0.446	N/A	0.352	N/A	0.498	0.454	0.650
Central Branch Kern Island Canal	1.032	0.048	0.000	0.048	0.000	0.000	0.000	N/A	N/A	N/A	0.048	0.000	0.048
Cross Valley Canal	15.251	0.476	0.000	0.316	0.000	0.000	0.000	N/A	N/A	N/A	0.476	0.000	0.316
Friant-Kern Canal	3.265	0.416	0.000	0.334	0.000	0.000	0.000	0.416	N/A	N/A	0.416	0.000	0.334
Kern Island Canal	1.156	0.023	0.000	0.023	0.000	0.000	0.000	N/A	N/A	N/A	0.023	0.000	0.023
Stine Canal	3.956	0.564	0.701	0.254	0.439	0.001	0.152	N/A	0.671	N/A	1.003	0.702	0.406
Unnamed Canal	1.639	0.085	0.000	0.000	0.000	0.000	0.000	N/A	N/A	N/A	0.085	0.000	0.000
Detention Basins	7.852	0.024	0.000	1.727	0.000	0.175	0.000	N/A	N/A	N/A	0.024	0.175	1.727
Stockdale Highway/State Route 43 Detention Basin	39.091	0.000	0.000	0.000	0.000	0.000	0.000	N/A	N/A	N/A	0.000	0.000	0.000
Total	182.237	10.992	5.860	10.787	4.182	0.189	0.630	3.108	2.518	1.619	15.174	6.049	11.417
^a Temporary impacts refer to construction access and staging areas; the temporary impact includes the areas under the bridges that will be accessed during construction. ^b Permanent structural impacts are due to proposed structures. ^c Permanent shade impacts are included for the Kern River (All Alternatives), Carrier Canal (Alternative B), Friant Kern Canal (Alternatives A and C), and Stine Canal (Alternative B); this impact is not applicable (N/A) to all other areas (e.g., box culverts). This impact represents the area under the bridge shaded at noon and overlaps with, or is equivalent to, the temporary impacts. Therefore, the "Total Impacts" column is the sum of the Temporary Construction Impact and the Permanent Structural Impact columns.													

4.2.1.4. COMPENSATORY MITIGATION

Prior to initiation of construction, Caltrans shall coordinate with and obtain necessary permits from the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Regional Water Quality Control Board regarding compensation for impact to jurisdictional habitat. The mitigation approach will be negotiated with the resource agencies and will consist of one or a combination of the following: 1) purchase of credits at a jurisdictional waters mitigation bank; 2) enhancement of jurisdictional waters; 3) restoration of jurisdictional waters; or 4) purchase of existing jurisdictional waters and placing a conservation easement over it.

4.3. Special-Status Plant Species

Thirty-two special-status plant species are known to occur in the region and are listed in Table 2. Of these special-status plant species, 23 have potential to occur in some portion of the biological study area (Table 2). One special-status plant species (Ferris' goldfields) was observed in the biological study area during the 2009 focused surveys (BonTerra Consulting 2009b). Focused surveys for Stockdale Highway and State Route 43 were conducted in 2012. As a condition of the U.S. Fish and Wildlife Service Biological Opinion, focused surveys for California jewelflower and San Joaquin woollythreads (in addition to Kern mallow and Bakersfield cactus) would be repeated to confirm their absence from the project impact areas. Those species that would potentially be affected by the project or need additional discussion are described in further detail below.

4.3.1. Discussion of California Jewelflower

California jewelflower is a federally and state-listed endangered species and a California Native Plant Society List 1B.1 species that blooms between February and May. This annual species grows in dry plains and slopes in grassland, saltbush scrub, and cismontane juniper woodland vegetation types at elevations between 240 to 2,950 feet above mean sea level (California Native Plant Society 2009; U.S. Fish and Wildlife Service 1998).

4.3.1.1. SURVEY RESULTS

The extant populations of this species occur in three general areas: Santa Barbara Canyon, the Carrizo Plain in San Luis Obispo County, and the Kreyenhagen Hills in Fresno County (U.S. Fish and Wildlife Service 1998). An introduced colony is in Kern County's Paine Preserve (U.S. Fish and Wildlife Service 1998).

This species was not observed during focused surveys of Segment 1 and is therefore not expected to occur in Segment 1 of the biological study area. Focused surveys of the Stockdale Highway and State Route 43 portion of the project were conducted in spring/summer 2012, but surveys were inconclusive due to lack of rainfall in winter 2011 to 2012. This species has potential to occur in the detention basin vegetation type.

4.3.1.2. PROJECT IMPACTS

There would be no impact on this species for any of the alternative alignments in Segment 1.

The proposed improvements at Stockdale Highway and State Route 43 would impact approximately 1.07 acres of detention basin and disturbed/ruderal vegetation where this species has potential to occur. These impacts are limited relative to the amount of similar habitat available in the project region (the 10-mile radius surrounding the biological study area); however, any impact on this species would be considered substantial.

4.3.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Pre-construction focused surveys for California jewelflower, Kern mallow, San Joaquin woollythreads, and Bakersfield cactus shall be done by a qualified biologist (one approved by the U.S. Fish and Wildlife Service) within the project impact area before ground-disturbing activities. The survey shall be done during this species' blooming period in accordance with the most current protocols approved by the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife. If the species is present within the impact area of the project, the impact would be considered potentially substantial depending on the number of individuals impacted. To the greatest extent practicable, efforts shall be made to avoid the species during project design. If avoidance is not feasible, seed shall be collected from this species before construction; seed will be used in habitat restoration.

4.3.1.4. COMPENSATORY MITIGATION

If this species is observed within the impact area and it cannot be avoided with measures listed in Section 4.3.1.3, Caltrans shall obtain a take authorization from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife before impacts to this species. Caltrans shall consult with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to determine the appropriate conservation measures to mitigate for impacts on this species. The mitigation shall include payment to an in-lieu fee program; preservation or enhancement of occupied

habitat for this species; or collection of seed within the impact area and planting within a mitigation site with the appropriate microhabitat for this species. A detailed mitigation and monitoring program shall be prepared by a qualified biologist and approved by the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.

4.3.2. Discussion of Ferris' Goldfields

Ferris' goldfields are listed as a California Native Plant Society List 4.2 species that flowers from February to May (CNPS 2009, 2011). This annual herb is endemic to California. The southern extent of its range includes Kern, Ventura, and San Luis Obispo counties (CNPS 2009, 2011). It occurs in vernal pools or on wet saline flats at elevations between sea level and 2,300 feet above mean sea level (Hickman 1993).

4.3.2.1. SURVEY RESULTS

Ferris' goldfields has been historically reported from the general Bakersfield area (1896 record), near Wasco (1958 record), and near Coles Levee at Pieri Road (1963 record). More recently, it is known from near the junction of Twisselman Road and Interstate 5 (1998 record) (Jepson Flora Project 2008).

Two large populations totaling about 3,500 individuals were observed in a flood-control basin within oil refinery lands just north of the Kern River (Figure 8).

4.3.2.2. PROJECT IMPACTS

If Alternative A cannot be designed to avoid this species it would impact both populations of Ferris' goldfields; this impact would be considered substantial based on the large number of individuals that would be affected.

Alternatives B and C and the intersection improvements at Stockdale Highway and State Route 43 would not impact the populations of Ferris' goldfields.

4.3.2.3. AVOIDANCE AND MINIMIZATION EFFORTS

To the greatest extent practicable, efforts will be made to avoid the species during Segment 1 project design.

4.3.2.4. COMPENSATORY MITIGATION

If Alternative A is selected as the preferred alternative and it cannot be designed to avoid the two populations of Ferris' goldfields, Caltrans shall develop a mitigation and monitoring program to compensate for the loss of Ferris' goldfields before impacts on this species. The mitigation program shall include preservation or enhancement of occupied habitat for this species or collection of seed within the

impact area and planting within a mitigation site with the appropriate microhabitat for this species. The mitigation and monitoring plan shall be prepared by a qualified biologist and shall contain appropriate performance criteria. If Ferris' goldfields would be impacted by improvements at Stockdale Highway and State Route 43, the mitigation plan shall also include mitigation for impacts on those individuals.

4.3.3. Discussion of San Joaquin Woollythreads

San Joaquin woollythreads is a federally listed endangered species and a California Native Plant Society List 1B.2 species that typically blooms between February and early May (USFWS 1998). This annual herb grows in grassland and saltbush scrub vegetation types (CNPS 2009, 2011; USFWS 1998b) between 200 and 2,625 feet above mean sea level (USFWS 1998). It is known to occur in Fresno, Kern, Santa Barbara, San Luis Obispo, Kings, and San Benito counties, and it historically occurred in Tulare County.

4.3.3.1. SURVEY RESULTS

The largest extant population occurs on the Carrizo Plain Natural Area in San Luis Obispo County. Much smaller populations are found in Kern County near Lost Hills, in the Kettleman Hills of Fresno and Kern counties, and in the Jacalitos Hills of Fresno County. The isolated occurrences are known from the Panoche Hills in Fresno and San Benito counties, the Bakersfield vicinity in Kern County, and in the Cuyama Valley (USFWS 1998).

This species was not observed during focused surveys of Segment 1 and is therefore not expected to occur in Segment 1 of the biological study area. Focused surveys of the Stockdale Highway and State Route 43 portion of the project were conducted in spring/summer 2012, but surveys were inconclusive due to lack of rainfall in winter 2011 to 2012. This species has potential to occur in the detention basin vegetation type.

4.3.3.2. PROJECT IMPACTS

There would be no impact on this species for any of the alternative alignments in Segment 1.

The proposed improvements at Stockdale Highway and State Route 43 would impact approximately 1.07 acres of detention basin and disturbed/ruderal vegetation where this species has potential to occur. These impacts are limited relative to the amount of similar habitat available in the project region (the 10-mile radius surrounding the biological study area); however, any impact on this species would be considered substantial.

4.3.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

See Section 4.3.1.3.

4.3.3.4. COMPENSATORY MITIGATION

If this species is observed within the impact area at Stockdale Highway and State Route 43 and it cannot be avoided with measures listed in Section 4.3.1.3, Caltrans shall obtain a take authorization from the U.S. Fish and Wildlife Service before impacts to this species. Caltrans shall consult with the U.S. Fish and Wildlife Service to determine the appropriate conservation measures to mitigate for impacts on this species. The mitigation shall include payment to an in-lieu fee program; preservation or enhancement of occupied habitat for this species; or collection of seed within the impact area and planting within a mitigation site with the appropriate microhabitat for this species. A detailed mitigation and monitoring program shall be prepared by a qualified biologist and approved by the U.S. Fish and Wildlife Service.

4.4. Special-Status Animal Species Occurrences

Most special-status animal species in Kern County are associated with particular habitat types that are absent from the biological study area. However, a number of regional special-status animal species can persist in areas subject to considerable disturbance and have managed to sustain themselves in highly modified environments (such as agricultural lands). Forty-one special-status wildlife species are known to occur in the region and are listed in Table 3. Of these special-status species, 24 have potential to occur or have been observed in the biological study area. Those species that will be affected by the project or need additional discussion are described in further detail below.

4.4.1. Discussion of Western Spadefoot

The western spadefoot is a California Species of Special Concern. This species inhabits grassland, coastal sage scrub, and other habitats with open sandy, gravelly soils. The western spadefoot is primarily a species of the lowlands, frequenting washes, floodplains of rivers, alluvial fans, and alkali flats (Stebbins 2003). The western spadefoot breeds in quiet streams, vernal pools, and temporary ponds. This species is rarely seen outside the breeding season. This species occurs in the Great Valley and bordering foothills as well as in the Coast Ranges from Monterey Bay south to Baja California, Mexico (Stebbins 2003).

4.4.1.1. SURVEY RESULTS

This species is known to occur near the biological study area along South Renfro Road, less than 2 miles south of Rosedale Highway (CDFG 2009, 2011). It has also been reported from the Kern Water Bank (KWBA 2009). Focused surveys for this species were not done as part of the project.

Marginally suitable habitat for this species occurs along the Kern River, unlined canals, and detention basins in the biological study area. This species was not observed during general surveys of the biological study area, but it has limited potential to occur in the biological study area.

4.4.1.2. PROJECT IMPACTS

This species has potential to occur in the riparian woodland along the Kern River, in unlined canals, and within detention basins in the biological study area. Alternative A would impact 11.91 acres of potential habitat for this species; Alternative B would impact 7.99 acres of potential habitat; Alternative C would impact 7.86 acres of potential habitat (Table 8).

The impact of each alternative would be considered adverse, but less than substantial, loss of foraging habitat relative to the amount of habitat available in the project region (the 10-mile radius surrounding the biological study area). However, breeding pools for this species are limited in number; therefore, an impact on a breeding pool for this species would be considered potentially substantial. Additionally, construction activities may result in the direct take of individuals of this species. This species meets the definition of Section 15380² of the California Environmental Quality Act Guidelines; therefore, any direct impact on this species would be considered potentially substantial.

² CEQA provides protection not only for federal and state-listed species, but also for any species that can be shown to meet the criteria for listing (CEQA Guidelines, Section 15380).

Table 8
Western Spadefoot Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Total	190.13	2.10	9.81	1.20	6.79	0.76	7.10
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

A pre-construction survey for the western spadefoot shall be conducted by a qualified biologist within the proposed impact area before construction. If this species is observed and is in imminent danger from construction activities, a qualified biologist shall capture and relocate the western spadefoot to an appropriate location outside the impact area. If the individuals found are tadpoles, a suitable pool in which to relocate the tadpoles shall be identified by the biologist and approved by the California Department of Fish and Wildlife before the tadpoles are translocated. The biologist doing the surveys shall hold the necessary permits to handle the species. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.

4.4.1.4. COMPENSATORY MITIGATION

With incorporation of the avoidance and minimization measures listed above, no mitigation would be required.

4.4.2. Discussion of Western Pond Turtle

The western pond turtle is a California Species of Special Concern. The western pond turtle occurs mainly in freshwater rivers, streams, lakes, ponds, vernal pools, and seasonal wetlands with basking sites such as logs, banks, or other suitable areas above water level. This subspecies occurs from the San Francisco Bay area south through the Coast Ranges to northern Baja California, Mexico, from sea level to 6,700 feet above mean sea level (Stebbins 2003). The current range is similar to the historic range, but populations have become fragmented by agriculture and urban development.

4.4.2.1. SURVEY RESULTS

This species is known to occur near the biological study area (CDFG 2009, 2011); however, location information is sensitive and cannot be released to protect this species from collectors. Focused surveys for this species were not done as part of the project.

Marginally suitable habitat for this species occurs along the Kern River, unlined canals, and detention basins in the biological study area. This species was not observed during general surveys of the biological study area; however, it has limited potential to occur in the biological study area.

4.4.2.2. PROJECT IMPACTS

This species has potential to occur in the riparian woodland along the Kern River, in unlined canals, and within detention basins in the biological study area. Alternative A would impact 11.91 acres of potential habitat for this species; Alternative B would impact 7.99 acres of potential habitat; Alternative C would impact 7.86 acres of potential habitat (Table 9).

The impact of each alternative would be considered adverse, but less than substantial, relative to the amount of habitat available in the project region (the 10-mile radius surrounding the biological study area). However, construction activities may result in the direct take of individuals of this species. This species meets the definition of Section 15380 of the California Environmental Quality Act Guidelines; therefore, any direct impact on this species would be considered potentially substantial.

Table 9
Western Pond Turtle Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Total	190.13	2.10	9.81	1.20	6.79	0.76	7.10
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.2.3. AVOIDANCE AND MINIMIZATION EFFORTS

A pre-construction survey for the western pond turtle shall be done by a qualified biologist within the proposed impact area before construction. If this species is observed and is in imminent danger from construction activities, the qualified biologist shall capture and relocate the western pond turtle to appropriate habitat outside the impact area in coordination with the California Department of Fish and Wildlife. A suitable pool in which to relocate the western pond turtle shall be identified by the biologist and approved by the California Department of Fish and Wildlife before the turtles are translocated. The biologist doing the surveys shall hold the necessary permits to handle the species. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.

4.4.2.4. COMPENSATORY MITIGATION

With incorporation of the avoidance and minimization measures listed above, no mitigation would be required.

4.4.3. Discussion of Coast Horned Lizard

The coast horned lizard is a California Species of Special Concern. The two former subspecies of the coast horned lizard (*P. c. blainvillei* and *P. c. frontale*) have recently been eliminated in current scientific literature, such as Stebbins (2003), based on scientific studies on this species. The two former subspecies are believed to intergrade in the project region (Garcia and Associates 2006). The coast horned lizard is a small, spiny, somewhat rounded lizard that occurs in scrubland, grassland, coniferous forests, and broadleaf woodland vegetation types. The coast horned lizard prefers open areas for basking and loose friable soil for burrowing (Stebbins 2003). The coast horned lizard occurs throughout much of California, west of the desert and Cascade-Sierra highlands south to Baja California, Mexico (Stebbins 2003).

4.4.3.1. SURVEY RESULTS

This species is known to occur near the biological study area in multiple locations near Buttonwillow and the Ten Section Oil Field (CDFG 2009, 2011). It has also been reported from the Kern Water Bank (KWBA 2009). Focused surveys for this species were not done as part of the project.

Limited suitable habitat for this species occurs along the Kern River, in unlined canals, and in non-native grasslands in the biological study area. This species was not observed during general surveys of the biological study area; however, it has limited potential to occur in the biological study area.

4.4.3.2. PROJECT IMPACTS

This species has a limited potential to occur in the non-native grasslands, although this is not its optimal habitat association. Alternative A would impact 66.10 acres of potential habitat for this species; Alternative B would impact 53.33 acres of potential habitat; Alternative C would impact 45.17 acres of potential habitat (Table 10).

The impact for each alternative would be considered adverse, but less than substantial, loss of habitat relative to the amount of habitat available in the project region (the 10-mile radius surrounding the biological study area). Construction activities may result in the direct take of individuals of this species; however, the number of individuals is expected to be limited because habitat for this species is marginally suitable in the biological study area. Therefore, direct impact on this species would be considered adverse but less than substantial.

Table 10
Coast Horned Lizard Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Total	405.41	19.19	46.91	5.70	47.63	4.73	40.44

4.4.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

A pre-construction survey for coast horned lizard shall be done by a qualified biologist within the proposed impact area before construction. If this species is observed and is in imminent danger from construction activities, a qualified biologist shall capture and relocate the coast horned lizard to appropriate habitat outside the impact area. Suitable habitat into which to relocate the coast horned lizard shall be identified by the biologist and approved by the California Department of Fish and Wildlife before translocating the lizards. The biologist doing the surveys shall hold the necessary permits to handle the species. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.

4.4.3.4. COMPENSATORY MITIGATION

With incorporation of the avoidance and minimization measures listed above, no mitigation would be required.

4.4.4. Discussion of Silvery Legless Lizard

The silvery legless lizard is a California Species of Special Concern. It is a small, secretive lizard that spends most of its life beneath the soil, under stones, logs, or debris, or in leaf litter. The silvery legless lizard requires areas with loose, sandy soil, moisture, warmth, and plant cover. It occurs in chaparral, pine-oak woodland, beach, and riparian vegetation types at elevations ranging from sea level to about 5,000 feet above mean sea level (Stebbins 2003). It occurs in the Coast, Transverse, and Peninsular ranges from Contra Costa County south to Baja California, Mexico (Stebbins 2003).

4.4.4.1. SURVEY RESULTS

This species is known to occur near the biological study area about 0.5 mile north of Rosedale Highway and 0.2 mile east of Fruitvale Avenue (CDFG 2009, 2011). Focused surveys for this species were not done as part of the project.

Suitable habitat for this species occurs in the non-native grasslands along the Kern River, in detention basins, and in unlined canals in the biological study area. Soils throughout the biological study area are sandy loams or loamy sands, which would be suitable for this species. This species was not observed during general surveys of the biological study area; however, it has potential to occur in the biological study area.

4.4.4.2. PROJECT IMPACTS

This species has potential to occur in the riparian woodland along the Kern River and in unlined canals in the biological study area. Alternative A would impact 11.91 acres of potential habitat for this species; Alternative B would impact 7.99 acres of potential habitat; Alternative C would impact 7.86 acres of potential habitat (Table 11).

The impact of all of the alternatives would be considered adverse, but less than substantial, loss of habitat relative to the amount of habitat available in the project region (the 10-mile radius surrounding the biological study area). Construction activities may result in the direct take of individuals of this species; the number of individuals that could be lost may be potentially substantial because this species is patchily distributed, and habitat along the Kern River is suitable for this species. Therefore, direct impacts on this species would be considered potentially substantial.

Table 11
Silvery Legless Lizard Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Total	190.13	2.10	9.81	1.20	6.79	0.76	7.10
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.4.3. AVOIDANCE AND MINIMIZATION EFFORTS

A pre-construction survey for the silvery legless lizard shall be done by a qualified biologist within the proposed impact area before construction. If this species is observed and is in imminent danger from construction activities, a qualified biologist shall capture and relocate the silvery legless lizard to appropriate habitat outside the impact area. Suitable habitat into which to relocate the silvery legless lizard shall be identified by the biologist and approved by the California Department of Fish and Wildlife before the lizards are translocated. The biologist doing the surveys shall hold the necessary permits to handle the species. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.

4.4.4.4. COMPENSATORY MITIGATION

With incorporation of the avoidance and minimization measures listed above, no mitigation would be required.

4.4.5. Discussion of Golden Eagle

The golden eagle is a California Fully Protected species. This species is on the California Department of Fish and Wildlife's Watch List (nesting and wintering individuals) and is also protected by the Federal Bald Eagle Act. Habitat for this species consists of grasslands, deserts, savannas, and early successional stages of forest and shrub habitats. Broad expanses of open country are required for foraging, while nesting is restricted mostly to rugged mountainous areas with large trees or on cliffs (Johnsgard 2001).

4.4.5.1. SURVEY RESULTS

No nests were reported near the biological study area, but this species is known to occur in the region. Focused surveys for this species were not done as part of the project.

Suitable foraging habitat, but no suitable nesting habitat, is present within the biological study area. This species was not observed during general surveys of the study area. It may occur in the biological study area for foraging in winter, but is not expected to occur for nesting.

4.4.5.2. PROJECT IMPACTS

This species has potential to forage in all undeveloped vegetation types in the biological study area. Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential habitat; Alternative C would impact 72.49 acres of potential habitat (Table 12).

The project would contribute to the regional ongoing loss of raptor foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 12
Golden Eagle Potential Habitat Areas That
Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.5.3. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary.

4.4.5.4. COMPENSATORY MITIGATION

Impacts would be considered less than substantial; therefore, no mitigation would be required.

4.4.6. Discussion of Swainson's Hawk

The Swainson's hawk is a state-listed threatened species. The Swainson's hawk formerly bred along the coast in California, but breeding is now mostly limited to the Sacramento and San Joaquin valleys, the extreme northeast of California, and Mono and Inyo counties (England et al. 1997). In the Central Valley, breeding territories include riparian forest or remnant riparian trees in combination with high-quality foraging habitats such as fallow fields and alfalfa fields (Woodbridge 1998). This species winters in the pampas grass regions of South America.

4.4.6.1. SURVEY RESULTS

This species is known to nest near the biological study area west of Bakersfield along the Kern River about 5.5 miles north-northeast of the intersection of Interstate 5 and State Route 119 (CDFG 2009, 2011). Focused surveys for this species were done in the biological study area.

Suitable foraging habitat is present throughout the undeveloped vegetation types in the biological study area, and suitable nesting habitat is present along the Kern River. This species was not observed during focused surveys of the biological study area in 2009 (BonTerra Consulting 2009c); it has limited potential to nest along the Kern River near Segment 1 of the biological study area in the future because this species nests in Kern County and there is suitable habitat along the Kern River.

4.4.6.2. PROJECT IMPACTS

Because no Swainson's hawks were observed during the 2009 survey, the project may have no direct or indirect effect on this species. However, this species has potential to forage in undeveloped vegetation types in the biological study area. Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential foraging habitat; Alternative C would impact 72.49 acres of potential foraging habitat (Table 13).

The project would contribute to the regional ongoing loss of raptor foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Swainson's hawk could nest in trees within the biological study area, most likely along the Kern River. Tree removal and/or nearby construction could adversely affect nesting efforts for this species. Construction during the breeding season could disturb nesting activities, possibly resulting in nest abandonment, loss of young, and reduced health and vigor of eggs and/or nestings. Direct effects on an active Swainson's hawk nest would be considered a violation of the California Endangered Species Act, the *California Fish and Game Code* (Sections 3503, 3503.5, and 3513), and the Migratory Bird Treaty Act. Any impact on an active nest would be considered substantial.

Table 13
Swainson's Hawk Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.6.3. AVOIDANCE AND MINIMIZATION EFFORTS

Tree removal within 500 feet of non-native grassland, agricultural, and detention basins shall occur outside the Swainson's hawk breeding season. If construction were initiated during the Swainson's hawk nesting season (February 1 and August 31), a pre-construction survey for Swainson's hawk nests shall be conducted before construction activities. A qualified biologist shall survey within the limits of the biological study area and within a 0.5-mile radius around the biological study area for the presence of an active nest in accordance with the *Swainson's Hawk Technical Advisory Committee's (TAC) Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California, Central Valley*. Any active nest found during survey efforts shall be mapped and provided to the construction foreman. If Swainson's hawk is nesting within 0.5 mile of the proposed impact area, the California Department of Fish and Wildlife would be consulted to evaluate the

potential for disturbance of the nesting birds during construction and to approve measures that would avoid impacts on the active nest; authorization to proceed shall be obtained before work starts. The active site shall be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the *California Fish and Game Code* and the California Endangered Species Act.

If no active nests are found, no further mitigation would be required. Results of the surveys shall be provided to the California Department of Fish and Wildlife.

To protect an active nest site, the following restrictions on construction are required between February 1 and August 31 (or until nests are no longer active, as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 500 feet in any direction from any occupied Swainson's hawk nest and (2) access and surveying shall be restricted within 300 feet of any occupied Swainson's hawk nest. Any encroachment into the 500-/300-foot buffer area around the known nest shall be allowed only if the qualified biologist determines that the proposed activity will not disturb the nest occupants.

4.4.6.4. COMPENSATORY MITIGATION

With incorporation of the avoidance and minimization measures listed above, no mitigation would be required.

4.4.7. Discussion of Northern Harrier

The northern harrier is a California Species of Special Concern. It is a regular winter resident in marshes and fields, but is a rare breeder in the region (Heindel 2000). This species nests on the ground in a variety of wetland and upland habitats (MacWhirter and Bildstein 1996). The northern harrier can be expected at any month of the year and can be seen foraging in scrub, riparian, and grassland vegetation types within the region.

4.4.7.1. SURVEY RESULTS

No nests were reported near the biological study area, but this species is known to occur in the region. Focused surveys for this species were not done as part of the project.

Suitable foraging habitat, but no suitable nesting habitat, is present within the biological study area. This species was not observed during general surveys of the biological study area; it may occur in the biological study area for foraging, but is not expected to occur for nesting.

4.4.7.2. PROJECT IMPACTS

This species has potential to forage in all undeveloped vegetation types in the biological study area. Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential habitat; Alternative C would impact 72.49 acres of potential habitat (Table 14).

The project would contribute to the regional ongoing loss of raptor foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 14
Northern Harrier Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.7.3. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary.

4.4.7.4. COMPENSATORY MITIGATION

Impacts would be considered less than substantial in the biological study area; therefore, no mitigation would be required.

4.4.8. Discussion of White-Tailed Kite

The white-tailed kite is a California Fully Protected species (nesting individuals). Kites nest mainly in oaks (*Quercus* sp.), willows (*Salix* sp.), and sycamores (*Platanus racemosa*); they forage in grassland and scrub vegetation types. White-tailed kites show strong site fidelity to nest groves and trees.

4.4.8.1. SURVEY RESULTS

This species is known to nest near the biological study area west of Bakersfield along the Kern River about 5.5 miles north-northeast of Interstate 5 and State Route 119 (CDFG 2009, 2011). Focused surveys for this species were not done as part of the project.

Suitable foraging and nesting habitat is present within the biological study area. This species was not observed during general surveys of the biological study area, but it may occur in the biological study area for foraging and nesting. Focused surveys would be required to determine the nesting status of this species in this segment.

4.4.8.2. PROJECT IMPACTS

This species has potential to forage in all of the undeveloped vegetation types in the biological study area. Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential habitat; Alternative C would impact 72.49 acres of potential habitat (Table 15).

The project would contribute to the regional ongoing loss of raptor foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 15
White-tailed Kite Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.8.3. AVOIDANCE AND MINIMIZATION EFFORTS

A pre-construction survey for nesting raptors shall be done by a qualified biologist within the limits of project disturbance. Any active nest found during survey efforts shall be mapped on the construction plans. If nesting activity is present, the active site shall be protected until nesting activity ends to ensure compliance with Section 3503.5 of the *California Fish and Game Code*.

Nesting activity for raptors in the region normally occurs from February 1 to August 31. If no active nests are found, no further mitigation would be required. Results of the surveys shall be provided to the California Department of Fish and Wildlife.

To protect any nest site, the following restrictions on construction would be required between February 1 and August 31 (or until nests are no longer active, as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 300 feet in any direction from any occupied nest and (2) access and surveying shall be restricted within 200 feet of any occupied nest. Any encroachment into the 300-/200-foot buffer area around the known nest shall only be allowed if it is determined by a qualified biologist that the proposed activity shall not disturb the nest occupants. Construction during the non-nesting season can occur only at the sites if a qualified biologist determines that fledglings have left the nest.

4.4.8.4. COMPENSATORY MITIGATION

With incorporation of the avoidance and minimization measures listed above, no mitigation would be required.

4.4.9. Discussion of American Peregrine Falcon

The American peregrine falcon is a California Fully Protected species that, due to recent population gains, was delisted from the federal list of endangered species by the U.S. Fish and Wildlife Service (1999a). The California Fish and Game Commission voted for this species' removal on December 12, 2008, from the California Department of Fish and Game's California list of endangered species. As a delisted species, the peregrine falcon will continue to be periodically monitored until 2015 (USFWS 2006). Peregrine falcons prey almost exclusively on birds and use a variety of habitats, particularly wetlands and coastal areas. They nest on cliff faces within range of foraging areas.

4.4.9.1. SURVEY RESULTS

Suitable foraging habitat, but no suitable nesting habitat, is present within the biological study area. This species was not observed during general surveys of the biological study area; it may occur in the biological study area for foraging in winter, but is not expected to occur for nesting. Focused surveys for this species were not done as part of the project.

4.4.9.2. PROJECT IMPACTS

This species has potential to forage in the undeveloped vegetation types in the biological study area. Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential habitat; Alternative C would impact 72.49 acres of potential habitat (Table 16).

The project would contribute to the regional ongoing loss of raptor foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 16
American Peregrine Falcon Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.9.3. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary.

4.4.9.4. COMPENSATORY MITIGATION

Impacts would be considered less than substantial in the biological study area; therefore, no mitigation would be required.

4.4.10. Discussion of Mountain Plover

The mountain plover is a California Species of Special Concern. Wintering populations in California are found in grasslands or landscapes that resemble the grasslands of their historic wintering grounds (cultivated fields, fallow agricultural lands). This species does not nest in California.

4.4.10.1. SURVEY RESULTS

The mountain plover is known from the Tule Elk State Reserve (CDFG 2009, 2011). Focused surveys for this species were not done as part of the project.

Suitable wintering habitat is present in the biological study area. This species was not observed during general surveys of the biological study area, but it may occur in the biological study area for foraging in winter. This species nests outside the project region.

4.4.10.2. PROJECT IMPACTS

This species has potential to forage in non-native grasslands, waterways, detention basins, disturbed/ruderal, and agricultural areas in the biological study area.

Alternative A would impact 91.84 acres of potential foraging habitat for this species; Alternative B would impact 76.28 acres of potential habitat; and Alternative C would impact 71.07 acres of potential habitat (Table 17).

The project would contribute to the regional ongoing loss of winter foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 17
Mountain Plover Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	851.27	24.09	67.75	10.26	66.02	10.24	60.83
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.10.3. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary.

4.4.10.4. COMPENSATORY MITIGATION

Impacts would be considered less than substantial to the biological study area; therefore, no mitigation would be required.

4.4.11. Discussion of the Burrowing Owl

The burrowing owl is a California Species of Special Concern (active burrow sites). Although the burrowing owl was recently proposed as a State Candidate for listing, the California Department of Fish and Wildlife determined that the species did not warrant listing in consideration of its population throughout the state. In California, burrowing owls breed and forage in grasslands and prefer flat to low rolling hills in treeless terrain. They are small owls that nest in burrows, typically in open habitats often along banks and roadsides.

4.4.11.1. SURVEY RESULTS

This species is known from the multiple locations near the Tule Elk Reserve, Buena Vista Lake, Tupman, Oildale, and Taft (CDFG 2009, 2011). This species is known from multiple locations within 1 mile of the biological study area (CDFG 2009, 2011), including along 7th Standard Road and between Heath Road and State Route 99 (Caltrans et al. 1998; Bakersfield PWD and FHWA 2005). It has also been reported from the Kern Water Bank (KWBA 2009). Focused surveys for this species were done within Segment 1 of the biological study area. Focused burrowing owl

surveys at Stockdale Highway and State Route 43 are tentatively scheduled for spring/summer 2012.

Suitable foraging and nesting habitat is present within the biological study area. This species was not observed along the Kern River during focused surveys of the biological study area done during the breeding season (BonTerra Consulting 2008), but several burrows that could be used by this species were observed. This species was observed during pre-construction surveys for the Westside Parkway north of the Kern River and west of Mohawk Street during the wintering season (Figure 8). An individual was observed on December 10 and 11, 2008; however, it was absent during follow-up surveys on January 9 and 19, 2009 (AECOM 2009). Therefore, this individual was considered to be a transient owl. This species may occur in the biological study area for foraging and nesting during the breeding or wintering season.

4.4.11.2. PROJECT IMPACTS

Because no burrowing owls were observed during the 2008 survey and because the individual observed during pre-construction surveys in 2009 did not winter at the site, the project may have no direct or indirect effect on this species. However, this species, if it occurs in the future, has potential to forage in undeveloped vegetation types in the biological study area.

Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential habitat; Alternative C would impact 72.49 acres of potential habitat (Table 18).

The project would contribute to the regional ongoing loss of raptor foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 18
Burrowing Owl Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.11.3. AVOIDANCE AND MINIMIZATION EFFORTS

A pre-construction survey shall be conducted by a qualified biologist in accordance with the survey requirements detailed in the California Department of Fish and Game's October 17, 1995 *Staff Report on Burrowing Owl* no more than 30 days before initial ground-disturbing activities (CBOC 1993). Any active burrow found during pre-construction survey efforts shall be mapped and provided to the construction foreman. If no active burrows are found, no further mitigation shall be required.

No disturbance shall occur within 160 feet of occupied burrows during the non-breeding season (September 1 through January 31) or within 250 feet during the breeding season (February 1 through August 31).

If owls must be moved away from the disturbance area, passive relocation is preferable to trapping. Relocation shall be implemented only during the non-breeding season by a qualified biologist and would occur in coordination with the California Department of Fish and Wildlife. Owls shall be excluded from burrows in the immediate impact zone by installing one-way doors in burrow entrances. One-way doors shall be left in place for 48 hours to ensure owls have left the burrow before excavation.

An effort shall be made to preserve foraging habitat contiguous with occupied burrow sites for each pair of breeding burrowing owls or for every single unpaired resident bird.

4.4.11.4. COMPENSATORY MITIGATION

Compensatory mitigation for the San Joaquin kit fox shall also mitigate for the loss of burrowing owl habitat. Additional compensatory mitigation for burrowing owls shall be required only if burrowing owls found within 250 feet of construction activities during pre-construction surveys cannot be avoided during construction. In this event, potential compensatory mitigation may include purchase of suitable habitat through the payment of fees to the Metropolitan Bakersfield Habitat Conservation Plan Trust Group for this species or construction of artificial burrows in City sumps similar to the Kit Fox Habitat Program.

4.4.12. Discussion of Loggerhead Shrike

The loggerhead shrike is a California Species of Special Concern (nesting individuals). Shrikes forage in open habitats such as grasslands, pastures, and agricultural fields. They can often be found perched on snags, fences, and posts surveying the surrounding habitat for prey (large insects, small mammals, and lizards).

4.4.12.1. SURVEY RESULTS

This species is known to occur near the biological study area from the Rosedale-Rio Bravo Water Storage District spreading basin (Bakersfield et al. 2005), near the Kern River at Allen Road (BonTerra Consulting 2003), and between Heath Road and State Route 99 (Bakersfield et al. 2005). It has also been reported from the Kern Water Bank (KWBA 2009). Focused surveys for this species were not done as part of the project.

Suitable foraging and nesting habitat is present within the biological study area. This species was incidentally observed during focused surveys of the biological study area in 2008 (BonTerra Consulting 2008), and it is expected to occur in the biological study area for foraging and nesting.

4.4.12.2. PROJECT IMPACTS

This species has potential to forage in undeveloped vegetation types in the biological study area. Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential habitat; Alternative C would impact 72.49 acres of potential habitat (Table 19).

The project would contribute to the regional ongoing loss of habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of habitat

for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 19
Loggerhead Shrike Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.12.3. AVOIDANCE AND MINIMIZATION EFFORTS

A qualified biologist shall survey within the limits of project disturbance for the presence of any nesting locations. Any active nest found during survey efforts shall be mapped and provided to the construction foreman. If no active nests are found, no further mitigation would be required.

If nesting activity is present, the active site shall be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the *California Fish and Game Code*. Nesting activity for birds in the region normally occurs from February 1 to August 31. To protect any nest site, the following restrictions on construction are required between February 1 and August 31 (or until nests are no longer active, as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 300 feet in any direction from any occupied nest and (2) access and surveying shall be restricted within 200 feet of any occupied nest. Any encroachment into the 300-/200-foot buffer area around the known nest shall be allowed only if a qualified biologist determines that the proposed activity will not disturb the nest occupants.

4.4.12.4. COMPENSATORY MITIGATION

With incorporation of the avoidance and minimization measures listed above, no mitigation would be required.

4.4.13. Discussion of Tricolored Blackbird

The tricolored blackbird is a California Species of Special Concern (nesting colonies) and was recently emergency listed by the State as Endangered. This colonially nesting species breeds in marsh vegetation of bulrushes (*Scirpus* sp.) and cattails and has also been recorded nesting in willows, blackberries (*Rubus* sp.), and mustard (*Brassica* and *Hirschfeldia* sp.) (Beedy et al. 1991). During winter months, they forage in wet pastures, agricultural fields, and seasonal wetlands. Tricolored blackbirds are nomadic, wandering during the nonbreeding season and occupying colony sites intermittently (Unitt 1984).

4.4.13.1. SURVEY RESULTS

The tricolored blackbird is known near the junction of State Route 43 and Stockdale Highway, the south end of Buena Vista Lake, and at the Coles Levee Ecosystem Preserve (CDFG 2009, 2011). It has also been reported from the Kern Water Bank (KWBA 2009). Focused surveys for this species were not done as part of the project.

Suitable foraging habitat, but no suitable nesting habitat, is present within the biological study area. This species was not observed during general surveys of the biological study area; however, it may occur in the biological study area for foraging, though it is not expected to occur for nesting.

4.4.13.2. PROJECT IMPACTS

This species has potential to forage in non-native grasslands, riparian woodland/Great Valley cottonwood riparian forest, waterways, detention basins, disturbed/ruderal, and agricultural fields in the biological study area. Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential habitat; and Alternative C would impact 72.49 acres of potential habitat (Table 20).

The project would contribute to the regional ongoing loss of foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 20
Tricolored Blackbird Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	851.27	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.13.3. AVOIDANCE AND MINIMIZATION EFFORTS

Although not expected to nest in the biological study area, in order to ensure that there is no impact on this species, a qualified biologist shall survey within the limits of project disturbance for the presence of any nesting locations. Any active nest found during survey efforts shall be mapped and provided to the construction foreman. If no active nests are found, no further mitigation would be required.

If nesting activity is present, the active site shall be protected until nesting activity has ended to ensure compliance with the California Endangered Species Act and Section 3503.5 of the *California Fish and Game Code*. Nesting activity for birds in the region normally occurs from February 1 to August 31. To protect any nest site, the following restrictions on construction are required between February 1 and August 31 (or until nests are no longer active, as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 300 feet in any direction from any occupied nest and (2) access and surveying shall be restricted within 200 feet of any occupied nest. Any encroachment into the 300-/200-foot buffer area around the known nest shall be allowed only if a qualified biologist determines that the proposed activity will not disturb the nest occupants.

4.4.13.4. COMPENSATORY MITIGATION

Impacts would be considered less than substantial; therefore, no mitigation would be anticipated.

If this species is observed nesting within the impact area and take is anticipated, Caltrans shall obtain a take authorization from the California Department of Fish and Wildlife before impacts to this species occur. Caltrans shall consult with the California Department of Fish and Wildlife to determine the appropriate conservation measures to mitigate for impacts on this species. The mitigation may include payment to an in-lieu fee program; preservation or enhancement of occupied habitat for this species; or creation of a mitigation site with the appropriate habitat for this species. A detailed mitigation and monitoring program shall be prepared by a qualified biologist and approved by the California Department of Fish and Wildlife.

4.4.14. Discussion of Yellow-Headed Blackbird

The yellow-headed blackbird is a California Species of Special Concern (nesting). It nests in emergent wetland vegetation over water. This species forages in wetlands and surrounding grasslands, croplands, or savannas.

4.4.14.1. SURVEY RESULTS

The yellow-headed blackbird is known to occur at Buena Vista Lake (CDFG 2009, 2011). It has also been reported from the Kern Water Bank (KWBA 2009). Focused surveys for this species were not done as part of the project.

Suitable foraging habitat, but no suitable nesting habitat, is present within the biological study area. This species was not observed during general surveys of the biological study area; it may occur in the biological study area for foraging, though it is not expected to occur for nesting.

4.4.14.2. PROJECT IMPACTS

This species has potential to forage in non-native grasslands, waterways, detention basins, disturbed/ruderal, and agricultural fields in the biological study area. Alternative A would impact 91.84 acres of potential foraging habitat for this species; Alternative B would impact 76.28 acres of potential habitat; and Alternative C would impact 71.07 acres of potential habitat (Table 21).

The project would contribute to the regional ongoing loss of foraging habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of foraging habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 21
Yellow-headed Blackbird Potential Habitat Areas
That Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	851.27	24.09	67.75	10.26	66.02	10.24	60.83
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

4.4.14.3. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary.

4.4.14.4. COMPENSATORY MITIGATION

Impacts would be considered less than substantial; therefore, no mitigation would be required.

4.4.15. Discussion of Western Mastiff Bat

The western mastiff bat is a California Species of Special Concern. The western mastiff bat is a very wide-ranging and high-flying insectivore that typically forages in open areas with high cliffs. The western mastiff bat is found in many open semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban areas. It roosts in small colonies in crevices on cliff faces (Zeiner et al. 1990). This species occurs in the southeastern San Joaquin Valley and coastal ranges from Monterey County southward through Southern California, and from the coast eastward to the Colorado Desert (Zeiner et al. 1990).

4.4.15.1. SURVEY RESULTS

The western mastiff bat was historically known to occur near the biological study area in Bakersfield, Buttonwillow, Sumner, and Buena Vista Lake (CDFG 2009, 2011). Focused surveys for this species were not done as part of the project.

Suitable foraging and roosting habitat is present in the biological study area. This species was not observed during general surveys of the biological study area, but it may occur in the biological study area.

4.4.15.2. PROJECT IMPACTS

This species has potential to forage in all undeveloped vegetation types in the biological study area. Alternative A would impact 95.38 acres of potential foraging habitat for this species; Alternative B would impact 78.12 acres of potential habitat; Alternative C would impact 72.49 acres of potential habitat (Table 22).

The project would contribute to the regional ongoing loss of habitat in the project region (the 10-mile radius surrounding the biological study area). The loss of habitat for this species would be limited relative to the availability of similar habitat in the region. This impact would be considered adverse, but less than substantial.

Table 22
Western Mastiff Bat Potential Habitat Areas That
Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

If night lighting is planned, spillover of light into the adjacent open space could have an adverse impact on the foraging activities of bats, which are nocturnal species. This may result in reduced health and vigor of bats and/or their young. Therefore, the project's night lighting may affect foraging habitat for these species, but because the loss of foraging habitat is limited relative to the availability of habitat in the region and because the biological study area is an area that is generally developed, it is not likely to adversely affect these species.

4.4.15.3. AVOIDANCE AND MINIMIZATION EFFORTS

Western Mastiff Bat: During construction, when nightwork is required, lighting during the early evening twilight hours (i.e., two hours before sunrise and two hours after sunset) adjacent to open space areas shall be minimized or avoided to the greatest extent possible. Permanent night lighting for the project shall be directed away from natural open space areas.

4.4.15.4. COMPENSATORY MITIGATION

With incorporation of the avoidance and minimization measures listed above, no mitigation would be required.

4.4.16. Discussion of San Joaquin Kit Fox

The San Joaquin kit fox is a federally listed endangered species and a state-listed threatened species. Of the various subspecies of kit fox (*Vulpes macrotis*), the San Joaquin kit fox is the largest (USFWS 1998b). Kit foxes are primarily nocturnal, emerging at sunset to hunt prey such as kangaroo rats (*Dipodomys* spp.), black-tailed jackrabbits (*Lepus californicus*), desert cottontails, and California ground squirrels (Thomas Reid Associates 1994).

Before the introduction of irrigated agriculture in the valley, this species occurred in valley saltbrush scrub, alkali sink, and lower Sonoran grassland communities (Thomas Reid Associates 1994). In the southern portion of its range, the kit fox is associated with valley sink scrub, saltbush scrub, upper Sonoran subshrub scrub, and annual grassland; it also inhabits grazed grasslands, oil fields, and urban areas (Thomas Reid Associates 1994).

This species has historically occurred throughout most of the San Joaquin Valley from San Joaquin County to the north and Kern County to the south (USFWS 1998b). The largest extant populations of kit foxes are in western Kern County near the Elk Hills and Buena Vista Valley and in the Carrizo Plain Natural Area in San Luis Obispo County (USFWS 1998b). In urban areas, the kit fox is subject to tremendous environmental stress: animals are killed on roads; burrows are destroyed in the path of development; animals are poisoned by rodenticides; and foxes can be hunted or harassed by domestic dogs. Because of these stresses and the fact that development will soon encompass the area, the urban population is considered marginal (Morrell 1975).

4.4.16.1. SURVEY RESULTS

Near the biological study area, this species is known to occur near the Calloway Canal; the Friant Kern Canal; northwest of State Route 43 and Interstate 5; near Coffee Road; near State Route 99 and Rosedale Highway; and near Interstate 5 and Rosedale Highway. Focused surveys for this species were done in Segment 1 of the biological study area. In addition, pre-construction surveys for this species were done by AECOM for the Westside Parkway project (Segment 2) (see Appendix H; AECOM 2009).

Suitable habitat for this species is present within the biological study area. Several dens of this species were observed along the Kern River near Mohawk Street and adjacent grasslands and in City Basin 143 (Alternative B) during focused surveys of the biological study area in 2008 and pre-construction surveys in 2009 (AECOM 2009; Appendix H). In addition, kit foxes were documented south of Truxtun Avenue; in the landscaped Kern River Parkway; along the Carrier Canal and BNSF Railway corridor; and in the City maintenance facility and infiltration basins (City of Bakersfield and Caltrans 2009). No potential dens were observed at Stockdale Highway and State Route 43.

San Joaquin kit foxes are also known near the biological study area at the Sundale Country Club, Quailwood Park, Seven Oaks Country Club, and the California State University, Bakersfield campus (City of Bakersfield and Caltrans 2009).

4.4.16.2. PROJECT IMPACTS

This species has potential to forage and den in undeveloped vegetation types in the biological study area. Alternative A would impact 95.38 acres of potential habitat and 1 active den for this species (City of Bakersfield and Caltrans 2009); Alternative B would impact 78.12 acres of potential habitat and 3 potential dens for this species (City of Bakersfield and Caltrans 2009); Alternative C would impact 72.49 acres of potential habitat and 1 potential den for this species (City of Bakersfield and Caltrans 2009) (Table 23). This loss of habitat also accounts for reduced prey availability. The project would contribute to the regional ongoing loss of foraging/denning habitat in the project region (the 10-mile radius surrounding the biological study area). This impact would be considered substantial.

The proposed project would impact existing detention basins used for the kit fox; however, the detention basins would be replaced as part of the proposed project, and new detention basins would be added. Alternative A includes 7 basins, Alternative B would include 8 basins, and Alternative C would include 11 basins. The additional of

basins in kit fox activity areas may be considered a beneficial impact of the project if they are located in areas that were previously developed, and a less than substantial impact if they are converted from undeveloped open space to a basin. If night lighting is planned, spillover of light into the adjacent open space could have an adverse impact on foraging activities by kit fox, which is a nocturnal species. This may result in reduced health and vigor of kit foxes and/or their young. Therefore, since the project's night lighting may affect habitat for this species, the impact would be considered potentially substantial.

Table 23
San Joaquin Kit Fox Potential Habitat Areas That
Would Be Impacted by the Project

Vegetation Types	Segment 1						
	Existing	Alternative A		Alternative B		Alternative C	
		Perm	Temp	Perm	Temp	Perm	Temp
Non-Native Grassland	405.41	19.19	46.91	5.70	47.63	4.73	40.44
Riparian Woodland/Great Valley Cottonwood Riparian Forest	39.92	0.35	3.19	0.00	1.84	0.00	1.42
Waterways	102.89	1.11	6.54	0.36	4.94	0.76	4.93
Detention Basin	47.32	0.64	0.08	0.84	0.01	0.00	0.75
Disturbed/Ruderal	151.84	3.09	13.42	3.36	13.44	4.69	13.91
Agriculture	143.81	0.06	0.80	0.00	0.00	0.06	0.80
Total	891.19	24.44	70.94	10.26	67.86	10.24	62.25
Note: All alternatives include the improvements at Stockdale Highway and State Route 43. Perm=permanent; Temp=temporary							

It should be noted that the City has take authorization for this species through the Metropolitan Bakersfield Habitat Conservation Plan Incidental Take Permit, which has been extended to 2019.

4.4.16.3. AVOIDANCE AND MINIMIZATION EFFORTS

Measures have been developed from standard recommendations described in the *USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011b). In addition, project design changes have been identified to reduce impacts on the kit fox and could be incorporated into the design plans for the project. The main objective of project design changes is to maintain opportunities for kit foxes to cross over the road surface while reducing the potential for unintentional vehicle strikes. Project design changes, when implemented together, are expected to reduce the potential for adverse effects on the kit fox. Final project design changes shall be re-evaluated and adjusted

accordingly during the final project design phase and submitted for review and approval to U.S. Fish and Wildlife Service.

- Caltrans shall include Special Provisions that include the avoidance and minimization measures from the Biological Opinion (USFWS 2013) when soliciting contractor bid packages.
- Construction activities shall adhere to the standard construction and operational requirements, as described in the U.S. Fish and Wildlife Service *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011b) and updated with specifics in the Biological Opinion.
- No less than 30 days but no more than 60 days before road construction, a U.S. Fish and Wildlife Service-approved qualified biologist shall conduct a survey for kit fox dens within the project footprint and within 200 feet of the construction footprint, including utility relocations. A letter report and map of known and potential kit fox dens shall be submitted to the U.S. Fish and Wildlife Service prior to the start of ground-disturbance and/or construction activities. Repeat clearance surveys for kit fox shall be conducted no more than 14 days before construction or after any delays in construction of over 2 weeks. Any new kit fox dens identified since completing the 60-day survey shall be reported to the U.S. Fish and Wildlife Service in a letter report and map. If no new kit fox dens are identified, an internal record shall be maintained that includes the survey date, designated biologist conducting the survey, and general survey findings. The records shall be submitted to the U.S. Fish and Wildlife Service upon request.
- Disturbance of all San Joaquin kit fox dens shall be avoided to the maximum extent practicable. If known dens or potential dens are detected in the project footprint during 60-day and/or 14-day pre-construction clearance surveys, Caltrans shall request agency permission to monitor and excavate dens that would be affected directly by the project and cannot be avoided; active dens shall not be excavated during the natal season (January 1–June 30). The U.S. Fish and Wildlife Service-approved biologist shall monitor potential dens for three consecutive nights using tracking medium and/or remote sensor camera and submit monitoring results in a letter report to the U.S. Fish and Wildlife Service. The biologist shall oversee the hand excavation of dens that have been determined to be vacant following approval by the U.S. Fish and

Wildlife Service; results of the den excavation and exclusion activities shall be reported to the U.S. Fish and Wildlife Service in a letter report. Dens found within 200 feet of project construction but not directly affected by construction activities shall be monitored and buffered from construction by an exclusion zone around dens, as measured outward from the entrance or cluster of entrances of each den. The biologist shall place flagged stakes in a 50-foot radius buffer around any potential or atypical den. The biologist shall place a fence (e.g., wooden posts connected with caution tape; orange construction cones; orange construction fencing with a mesh size less than 2 inches in diameter [to prevent kit fox from becoming entangled in the fencing] with gaps every 50 feet, or other fencing approved by the U.S. Fish and Wildlife Service as long as it has openings for entry/exit of kit fox and keeps humans and equipment out) 100 feet from a known den.

Fencing/flagging will be maintained until all construction-related disturbances have been terminated. At that time, all fencing/flagging shall be removed to avoid attracting subsequent attention to the dens. Caltrans shall immediately notify the U.S. Fish and Wildlife Service if a natal den is found, either within the project footprint or within 200 feet of the project footprint. The biologist would submit results of den excavation and exclusion in a letter report to the U.S. Fish and Wildlife Service.

- The U.S. Fish and Wildlife Service-approved biologist shall conduct a worker environmental awareness program for all construction crews before ground-disturbing activities. The purpose of this training is to inform construction crew members of permit terms and conditions and the potential for kit fox to occur at a site and be affected by construction activities, how to minimize effects on the species, and the penalties for non-exempted take. The training shall include, at a minimum (1) special-status species identification and a description of suitable habitat for the species; (2) avoidance of environmentally sensitive areas; and (3) measures to implement in the event that this species is found during construction. The training shall be repeated to all new crew members working in kit fox habitat. Following the training, crew members shall sign an attendance sheet stating that they attended the training and understand the protective measures and construction restrictions. Training materials and records of attendees shall be submitted to the U.S. Fish and Wildlife Service.

- The U.S. Fish and Wildlife Service-approved biologist shall monitor road construction activities on a daily basis. The biologist shall verify that construction complies with measures in the biological opinion (USFWS 2013). The biologist shall maintain a log of daily monitoring notes that can be summarized and transmitted to the U.S. Fish and Wildlife Service at its request.
- In areas of known kit fox activity and lower traffic speed/volume, the project right-of-way shall be fenced with permeable fencing. In high-density residential areas and areas with higher traffic speed/volume, the project right-of-way shall be fenced with permanent exclusionary fencing. For a permeable fencing design, one or a combination of the following three design options may be adopted to provide kit fox with movement opportunities: (1) elevating the bottom of the fence 5 inches above ground to allow unobstructed movement by kit foxes under the fence; (2) installing ground-level 8-by-8-inch-wide gaps no more than 100 feet apart for the length of the fence, which would allow kit fox movement at regular intervals along the right-of-way; and (3) installing fencing with a minimum mesh size of 3½ by 7 inches, preferably 5 by 12 inches, which would allow unlimited movement by kit fox through the fence.
- Curbed medians and median barriers shall be used as part of the project design and their height shall be no greater than 10 inches. In areas of known kit fox activity and lower traffic speed/volume, either 6-inch-high curbed medians with low vegetation (e.g., less than 6 inches) or 10-inch-high unvegetated curbed medians shall be used. The 10-inch curbed medians shall remain unvegetated to prevent obstructing the visual field of kit foxes near the roadway. Curbed medians less than 10 inches high and requiring landscaping shall be planted with low-level vegetation (i.e., less than 6 inches tall at maturity or mowed frequently) to prevent overgrowth and provide an unobstructed line of sight for the species, or shall have gaps installed measuring no less than 4 feet wide every 12 feet in areas landscaped with trees and shrubs. If required, landscaping shall be designed in conjunction with the curbed median design in order to allow unobstructed visibility to the San Joaquin kit fox and to maintain and/or enhance opportunities for movement across the roadway.
- Median barriers are required in some portions of the project for public safety. In areas of known kit fox activity and lower traffic speed/volume, Caltrans-

designed modified median barrier type 60/S shall be used. The Caltrans type 60/S design has been approved by the U.S. Fish and Wildlife Service (Biological Opinion #81420-2009-F-0752; U.S. Fish and Wildlife Service 2009) and includes 9-inch radius openings (9-inch-high by 18-inch-wide, half-circle openings) spaced every 150 feet to allow for kit fox passage. Specific conditions of the type of barriers to be used within the project construction area will comply with the specifications provided in the Biological Opinion provided in Appendix_F. In areas of known kit fox activity and higher traffic speed/volume, exclusionary fencing shall be used and these modifications will not be necessary in those areas.

- In areas of known kit fox activity and high traffic volumes and/or speed, existing kit fox movement corridors like canals, the Kern River, and railroads shall be preserved through the use of bridges and/or culverts for wildlife crossing. Some segments of the canals under the new roadway will be converted from trapezoidal channels to box culverts; other segments of the canals with existing box culverts will be extended. The toe-of-road fill and bridge support walls shall be maintained and new walls designed, no less than 20 feet from the centerline of canal access roads and the railroad centerlines.
 - An elevated bridge currently exists at the location where the Westside Parkway crosses the trapezoidal channel of the Friant-Kern Canal. Species access shall continue to be provided along an elevated access road located parallel to the canal.
 - An above-ground bridge shall be constructed over the trapezoidal channel of the Stine Canal. This will allow the species to move freely below the roadway.
 - An above-grade bridge (westbound Mohawk Street off-ramp) shall be constructed over the Cross Valley Canal, which exists as a double box culvert. The Kern River Corridor is located near the canal so it provides existing access for the species in the area; no additional crossing features are proposed at this canal site.
 - Two design options are proposed for the location where the new roadway will cross the Carrier Canal. If a box culvert is chosen, a crossing structure (with proposed 5 X 5 inch mesh size and 10 inch diameter escape pipes within a 60 inch diameter crossing culvert) shall be installed to connect the access roads on the north side of the canal.

If a bridge is chosen, no additional crossing feature would be necessary since the elevated bridge above the trapezoidal canal will allow the species to move freely below the roadway.

- Upon completion of project construction, all areas subject to temporary ground disturbance, including storage and staging areas, shall be restored to original grade and contour. Revegetation experts shall determine the appropriate methods and plant species used to revegetate these areas on a site-specific basis.
- To minimize opportunistic predatory effects to the San Joaquin kit fox, the City and Caltrans shall condition contracts with contractors to require that trash be removed at least once daily from project areas and disposed of offsite so as not to attract predator species like coyotes and bobcats to the project area.
- The City and Caltrans shall condition contracts with contractors to require contained water sources, which are inaccessible to San Joaquin kit fox (e.g., elevated water trucks), to be used for dust control and other construction water activities.
- The U.S. Fish and Wildlife Service-approved biologist shall meet weekly with the resident engineer and contractor to review the week's upcoming ground-disturbing activities, including any possible changes from the project as analyzed in the biological opinion and the avoidance and minimization measures. These meetings shall be documented and reported to Caltrans every two weeks, Caltrans will in turn report to the U.S. Fish and Wildlife Service every two weeks. Should the incidental take exceed the amount agreed upon in the Biological Opinion, Caltrans must immediately reinitiate formal consultation.
- If incidental take in the form of harassment, harm, injury, or death is likely, Caltrans shall immediately contact the U.S. Fish and Wildlife Service to report the encounter. If an injured or dead individual of a listed species is found, Caltrans shall follow the steps outlined in the *Salvage and Disposition of Individuals* section of the Biological Opinion.
- A post-construction report detailing compliance with the project design criteria and proposed conservation measures shall be provided to the U.S. Fish and Wildlife Service within 60 calendar days of completion of the project.

The report shall include: (1) dates of project groundbreaking and completion; (2) pertinent information concerning success of the project in meeting the conservation measures; (3) an explanation of failure to meet such measures, if any; (4) known project effects on San Joaquin kit fox, if any; (5) observed instances of injury to or mortality of the San Joaquin kit fox, if any; (6) the number of dens lost, if any; and (7) any other pertinent information. Any new sightings of the San Joaquin kit fox or its dens shall be reported to the California Natural Diversity Database.

- Caltrans shall install modified k-rail barriers that facilitate San Joaquin kit fox movement and passage across the roadways. Openings in the barriers shall be spaced every seven segments of k-rail; segments are 20-feet long, so intervals shall be spaced approximately every 140-feet. One, or a combination, of two design options shall be implemented. Designs include:
 - A Modified Type K segment with one 8-inch diameter hole cast or bored into a typical rail segment.
 - A Type L passageway that off-sets a segment of k-rail via a gap measuring between 8-inches and 5-feet.

Caltrans acknowledges that the aforementioned designs are only temporary solutions for addressing the issues of roadway permeability and wildlife passage; over the long-term, Caltrans will commit to conducting crash-test and safety studies on alternative design options in order to provide the most effective solutions for addressing San Joaquin kit fox movement across the roadscape.

Potential Indirect Effects

Vehicle strikes are considered an indirect effect as a result of the project. Currently, the San Joaquin kit fox is exposed to the traffic along existing roadways. Crossing a new larger roadway may result in an unintentional increase in vehicle-related mortality. Several kit fox road kills have been reported from the biological study area: three kit fox road kills were reported from the south side of the Kern River near Mohawk Street and Truxtun Avenue; six kit fox road kills were reported along Coffee Road; four kit fox road kills were reported along the Kern River Canal (south of the Kern River) (AECOM 2009).

Kit foxes in Bakersfield have been found to move along linear habitat features (canals, railway rights-of-way, Kern River corridor, roads), moving from one patch of

open space to another. Construction of the new roadway would incorporate several features to allow continued kit fox movement, including maintaining existing movement corridors along existing linear habitat features, such as the Kern River and Friant-Kern Canal. However, other canals would be converted from trapezoidal channels to box culverts under the proposed roadway; the project would extend existing box culverts in some of these locations. In areas of kit fox activity (e.g., Carrier Canal and Cross Valley Canal), this extension of the box culvert could disrupt kit fox movement when the canal is full of water. With a longer culvert to follow, kit foxes may choose to move out of the corridor and into upland habitat or developed areas to go around the box culvert. The increased movement through developed areas could increase kit fox mortality near these canals. While primary movement corridors would be maintained (e.g., Kern River, Friant-Kern Canal), movement along the other canals may be disrupted (e.g., Cross Valley Canal, Carrier Canal). Therefore, the project could substantially change movement patterns along canals in the biological study area.

Kit foxes attempting to cross the road would be expected to encounter a higher vehicle strike hazard as the new roadway begins to carry a higher volume of traffic (Bjurlin et al. 2005). The increased mortality associated with the increase in traffic volume may affect kit foxes and other wildlife crossing the road. A Section 7 consultation with the U.S. Fish and Wildlife Service would be required to confirm the avoidance and minimization measures included above for the San Joaquin kit fox.

4.4.16.4. COMPENSATORY MITIGATION

Caltrans has consulted with the U.S. Fish and Wildlife Service to determine the appropriate conservation measures to mitigate for impacts on this species, and has obtained take authorization from the U.S. Fish and Wildlife Service (See Biological Opinion in Appendix F).

The potential loss of kit fox habitat resulting from implementation of the project shall be mitigated at a no-net-loss ratio. Compensatory mitigation for habitat loss associated with the project shall include payment of mitigation fees to the Metropolitan Bakersfield Habitat Conservation Plan Trust Group for 10.26 acres of kit fox habitat permanently affected and 67.86 acres temporarily affected by construction of Alternative B, which has been selected as the preferred alternative³. For a permanent impact of 10.26 acres (5.70 acres of non-native grassland, 0.36 acre of

³ The Biological Opinion covers impacts of 11.28 acres for permanent impacts and 65.55 acres for temporary impacts. The Biological Opinion is currently being amended to reflect the latest design, which would permanently impact 10.26 acres and temporarily impact 67.86 acres.

waterways, 0.84 acre of detention basin, and 3.36 acres of disturbed/ruderal) the project shall implement a ratio of 3:1 for impacts on these habitat types (total 30.78 acres). For a temporary impact of 67.86 acres (47.63 acres of non-native grassland, 1.84 acres of riparian woodland/Great Valley cottonwood riparian forest, 4.94 acres of waterways, 0.01 acre of detention basin, and 13.44 acres of disturbed/ruderal) the project shall implement a ratio of 1.1:1 for impacts on these habitat types (total 74.65 acres). Caltrans shall verify that the City compensates for this loss through the Metropolitan Bakersfield Habitat Conservation Plan.

Prior to construction, the limits of permanent and temporary impacts shall be verified and mapped by habitat type within those limits. The map shall be submitted for U.S. Fish and Wildlife Service approval before submittal to the City of Bakersfield Planning Department for fee payment. Before construction starts on the project, the U.S. Fish and Wildlife Service shall be provided with the final documents related to protection of conservation acres, including Metropolitan Bakersfield Habitat Conservation Plan mitigation fee payment, of habitat conservation acreage.

4.5. Cumulative Impacts

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial, impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. This analysis considers known projects identified on the cumulative projects map maintained by the City of Bakersfield. In addition, the long-term growth projections for the area are used because they provide for future projects that would contribute to potential cumulative impacts for the project design year (2038). In addition to development projects, there are other circulation improvements that may contribute to cumulative impacts. Both the Thomas Roads Improvement Program projects and projects assumed under the Regional Traffic Impact Fee Program are part of the cumulative analysis. The California High-Speed Rail system would also cross through the biological study area.

Each of the cumulative projects has prepared its own environmental document. The following projects have the greatest potential to influence cumulative impacts:

- The Bakersfield Commons project (GPA/ZC 06-1877) is a 255-acre project located east and west of Coffee Road between Brimhall Road and State Route 58 (Rosedale Highway). The City of Bakersfield approved the General Plan Amendment and zone change in August 2010. The Bakersfield Commons project allows 1,400,000 square feet of retail commercial, 600,000 square feet of office commercial, 345 multi-family homes, and 80 single-family homes.
- A General Plan amendment and zone change were approved for the 564-acre Stockdale Ranch project in June 2010. The project site, which is on the south side of Stockdale Highway near Heath Road, will be annexed into the City of Bakersfield. The project provides for 3,583 residential units and 941,700 square feet of commercial/business park uses. Twenty acres are provided for Open Space-Park use.
- A General Plan amendment and zone change were approved for the 323-acre Saco Ranch Commercial Center project in August 2010. The project is located in the northwestern portion of Bakersfield, generally southeast and southwest of the intersection of Coffee Road and 7th Standard Road, west of the Union Pacific Railroad. The project would allow for approximately 1,459,500 square feet of retail commercial, 332,000 square feet of office uses, and 1,376,496 square feet of industrial uses. Full build-out is expected in 2030.
- The Crossroads Plaza Commercial Center project is located in the southern portion of Bakersfield, on the west side of Gosford Road, between Panama Lane and Harris Road. The project, on 75 net acres, would allow for development of a retail store (approximately 138,621 square feet, with 10,817 square feet containing a garden center), restaurants (42,741 square feet), and community retail center (605,008 square feet with 26,568 square feet containing a garden center). Discretionary actions included a Tentative Parcel Map and Site Plan Review. The project was approved in December 2010.
- The Regional Traffic Impact Fee Program requires new development to pay a proportionate share of the cost for new and expanded transportation facilities. The program includes a range of local street improvements designed to relieve traffic congestion. These improvements, which would be built through 2035, include the widening of several north-south roadways that cross State Route 58, particularly in the western portion of the study area.

- The California High-Speed Rail system proposes the construction of more than 800 miles of track that would connect major population centers. The proposed system is broken into nine segments. One of the first segments proposed for construction would be in the Central Valley from Fresno to Bakersfield. The California High-Speed Rail environmental document evaluated alignment alternatives for the Fresno-to-Bakersfield segment. A California High-Speed Rail station is proposed for downtown Bakersfield near the existing train station. Within this area, two potential alternative alignments are proposed. Alternatives D1-S and D2-N were evaluated in the Environmental Impact Report/Environmental Impact Statement and both feature a station location consistent with the preferred Bakersfield station location in Downtown Bakersfield near Truxtun Avenue near the existing Amtrack station. The station platform for Alternative D1-S would be elevated over the BNSF Railway mainline. For Alternative D2-N, the elevated station platform would be in the Mill Creek Redevelopment area, just south of the BNSF Railway right-of-way. The Draft Environmental Impact Report/Environmental Impact Statement was circulated for public review from August 15, 2011 to September 28, 2011.
- The State Route 178/Fairfax Road interchange project built an interchange at State Route 178 and Fairfax Road and added an additional eastbound and westbound lane to State Route 178 within the project area. The project also widened Fairfax Road through the state right-of-way and built a soundwall along the residential area in the northwest quadrant of the project. Work began on October 15, 2007 and was completed in 2009.
- The Mohawk Street Extension is a 1.2-mile, six-lane, north-south arterial from Rosedale Highway to Truxtun Avenue. The project built bridges over the BNSF Railway, the future Westside Parkway, and the Kern River. A box culvert was also built for Mohawk Street to cross over the Cross Valley Canal. Construction on the Mohawk Street Extension began in summer 2009 with an estimated completion in spring 2012. The project added a traffic signal at the Rosedale Highway/Mohawk Street intersection in September 2009 to facilitate construction, including the import of more than 38,500 truckloads of fill dirt totaling one-half million cubic yards. Improvements to the Mohawk Street/Truxtun Avenue intersection included signal changes and access to the new roadway.
- The State Route 99/7th Standard Road Interchange project widened 7th Standard Road within the project area; built a separate parallel bridge adjacent to and north

of the existing bridge crossing State Route 99; modified on- and off-ramps; and built an overpass for 7th Standard Road over the Union Pacific Railroad. Construction began May 6, 2008 and was completed in 2010.

- The proposed North Beltway project widens 7th Standard Road from the existing two-lane road to a four-lane expressway from Coffee Road to Zachary Avenue. The project includes the construction of new bridges over the Calloway, Friant-Kern, and Lerdo canals. The design also includes a grade separation at the BNSF Railway near Santa Fe Way.
 - Phase I of this corridor is complete and involved construction of a four-lane facility from the William M Thomas Terminal at Meadows Field Airport to State Route 99. This project was completed in spring 2008.
 - Phase II of the corridor improvement, which is complete, included widening the existing two-lane roadway to arterial standards, including construction of curb, gutter, sidewalk, and drainage facilities. Traffic signals at the Golden State Avenue and Saco Road intersections and a signal modification at Coffee Road were installed. A grade separation over the Union Pacific Railroad and an overpass structure over State Route 99 were constructed. Changes to the existing northbound off-ramp and new northbound on-ramp were made within state right-of-way.
 - Phase III of the project was completed in spring 2011, widening about six miles of 7th Standard Road from Coffee Road to Zachary Road. This phase widened 7th Standard from two to four lanes with a median. Also included in this phase was the construction of new bridges over the Lerdo, Friant-Kern and Calloway canals.
 - Phase IV extended the project west over the BNSF Railway at Santa Fe Way. A grade separation (bridge) was built at Santa Fe Way. This project is complete.
 - Phase V of the 7th Standard Road project will continue the widening to Interstate 5 to complete the corridor. Phase V is awaiting funding.
- The 24th Street project proposes to make improvements to the Oak Street/24th Street intersection and widen 24th and 23rd streets (State Route 178) from State Route 99 to M Street. Conceptual engineering and environmental studies are nearly complete. The draft environmental document is expected to be circulated in early 2012, with approval of the final environmental document expected in late

2012. The project will then be designed, and construction is slated to begin in mid-2014.

- The Hageman Flyover project would construct a roadway across State Route 99 to connect Hageman Road with Golden State Avenue (State Route 204). A Project Study Report has been completed, and preliminary design and environmental studies are underway. The draft environmental document is expected to be circulated in early 2012, with the final environmental document to be completed in late 2012.
- The State Route 178 at Morning Drive Interchange would build a new interchange at State Route 178 and Morning Drive and would widen State Route 178 to four lanes for about 1.5 miles. Approval of the final environmental document occurred in September 2011. Final design is underway and is expected to be completed in fall 2012. Construction is expected to begin in late 2012.
- The State Route 178 Widening project proposes to widen State Route 178 to six lanes from Canteria Drive to Masterson Street, and to four lanes from Masterson Street to Miramonte Drive. The project includes signal changes at Canteria Drive, Alfred Harrell Highway, Masterson Street, and Miramonte Drive. Preliminary alignment studies and environmental technical studies are underway. Circulation of the draft environmental document is expected in early 2012, and approval of the final environmental document is expected in late 2012. Construction is expected to begin in late 2015.
- The Rosedale Highway project would widen Rosedale Highway to a six-lane facility from Allen Road to State Route 99. The environmental document includes clearance for a grade separation at the railroad crossing near Landco Drive. The grade separation project is programmed to be funded through the City of Bakersfield's Transportation Impact Fee program. The draft environmental document has been circulated for public review. Approval of the final environmental document is expected in fall 2012, and construction is expected to begin in mid-2014.
- The West Beltway project would build a six-lane north-south facility, extending from State Route 119 to 7th Standard Road with 10 potential intersections/interchanges. The initial phase would construct an expressway along a portion of the alignment. Construction of the project depends on future development and available funding.

Implementing the development and transportation projects listed above would result in permanent and temporary loss of habitat for plant and wildlife species. Habitat fragmentation could also result from the following: when the landscape is parceled into smaller patches of habitat through the development of about 1,200 acres of open space; the construction and widening of roads for 10 Thomas Roads Improvement Program projects; and other infrastructure projects listed above.

The current strategy of mitigating for the loss of habitat is to secure large contiguous blocks of habitat to support core populations and to serve as corridors between core areas (U.S. Fish and Wildlife Service 1998). The Metropolitan Bakersfield Habitat Conservation Plan was designed to accomplish conservation of core habitat areas and wildlife movement corridors in metropolitan Bakersfield. The Metropolitan Bakersfield Habitat Conservation Plan covers 11 special-status plant species and 7 special-status wildlife species. Mitigation fees paid for each project are used to purchase and maintain habitat reserves. All of the development projects and the 10 Thomas Roads Improvement Program projects have mitigated or will be mitigating for cumulative loss of habitat by paying the Metropolitan Bakersfield Habitat Conservation Plan in-lieu mitigation fees.

Through consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife, it has been determined that the implementation of all 10 Thomas Roads Improvement Program projects could have a cumulative effect on the San Joaquin kit fox. The new roadways could disrupt movement corridors, reducing the probability that kit foxes could safely move from one area of suitable habitat to another in search of denning and foraging habitat. Patches of undeveloped kit fox habitat, which are already highly fragmented in Bakersfield, could be sufficiently degraded by construction of new and expanded roadways and associated infrastructure so that they would no longer function as suitable habitat. Reduced habitat connectivity associated with the build-out of these roadways and infrastructure could force kit foxes to use different areas for movement that could result in greater exposure to potential predators and risk of collisions with vehicles.

Implementing the Thomas Roads Improvement Program projects could permanently or temporarily impact kit fox dens. Dens within the corridor could be eliminated by earth-moving activities during project grading and construction. Dens in the immediate vicinity of roads might be damaged or destroyed by vibrations from construction activities. Loss of dens could result in the displacement of kit foxes.

Building new roads, widening existing roads, and creating new interchanges at intersections would increase the potential for vehicular mortality of San Joaquin kit foxes. The potential for increased traffic volumes on new roads and widened roads would increase the potential for vehicle strikes.

In addition to the project-specific avoidance, minimization, and compensatory mitigation measures described in 4.4.16.3 and 4.4.16.4, the project is proposing to mitigate for cumulative effects of the Thomas Roads Improvement Program road improvement projects by implementing the Sump Habitat Program, which is intended to provide long-term habitat conservation for the urban kit fox population. The conservation goals of the program would be achieved by installing artificial dens in selected sumps; enhancing kit fox habitat by controlling vegetation in and around dens; increasing kit fox accessibility to sumps through fence/gate gaps (with proposed dimensions of 6 X 6 inches to exclude predators like coyotes and medium to large-sized dogs); and reducing the potential for impacts to kit foxes associated with regular maintenance activities and predation. The City provided a Letter of Commitment to the U.S. Fish and Wildlife Service, dated August 10, 2010, fully supporting and providing assurance of the implementation and management of the Sump Habitat Program and its conservation efforts. The City is participating in a collaborative consultation process with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. The basic conceptual framework for the Sump Habitat Program is described in the September 2010 *Draft Sump Habitat Plan*, which addresses five core conservation goals in detail that are integral to the implementation success of the Sump Habitat Program: (1) the selection of sumps that maintain San Joaquin kit fox accessibility and/or habitat (i.e., those of high/medium conservation priority based on the relative potential for minimizing program-level effects); (2) the installation and maintenance of San Joaquin kit fox enhancement features (i.e., fence/gate gaps, artificial dens, conservation zones, signs, and enhancement maintenance and repair); (3) the management of sump vegetation compatible with San Joaquin kit fox presence and/or use (i.e., performance of routine maintenance outside the San Joaquin kit fox natal season and the use of hand tools in conservation zones and new active dens); (4) the biological monitoring and reporting of results (i.e., pre-maintenance surveys; den monitoring and supervised den excavation; environmental awareness training; maintenance monitoring; annual enhancement inspection; annual San Joaquin kit fox sump use monitoring; and annual reporting); and (5) the provision of long-term conservation assurances. Long-term conservation assurances will also be provided for all sumps included in the Sump Habitat Program. These assurances will include the following: (1) a recorded conservation easement for

each sump; (2) a perpetual, non-wasting endowment to pay for management, maintenance, and monitoring costs associated with ongoing implementation of the Sump Habitat Program; and (3) an agency-approved long-term preservation management plan. The proposed easement and endowment holders shall be an agency-approved third-party organization.

The Sump Habitat Plan shall continue to be updated, refined, and ultimately finalized through an ongoing, collaborative consultation process involving Caltrans, the City, the Thomas Roads Improvement Program consultant, and the U.S. Fish and Wildlife Service over the course of the final remaining Thomas Roads Improvement Program projects.

The finalized Sump Habitat Plan shall be established and implemented within one year of the approval of the final environmental document for the last six Thomas Road Improvement Program projects; the City shall fully fund the Sump Habitat Plan within one year of this approval. Caltrans and the City shall share responsibility for the Sump Habitat Plan; Caltrans shall adhere to the proposed avoidance and minimization measures and terms and conditions of the Biological Opinion and shall be responsible for the overall implementation of the Sump Habitat Plan, while the City shall be responsible for enhancing sumps and conducting long-term management of the Sump Habitat Plan. A U.S. Fish and Wildlife Service-approved third party shall be responsible for administering endowment funds and providing compliance oversight with the terms of the conservation easements for each sump in the Sump Habitat Plan.

Chapter 5. Conclusions and Regulatory Determinations

Before construction, the permits and special provisions summarized in Table 24 may be required.

Table 24
Project Permits and Special Provisions

Potential Impact	Law/Permit Provisions Anticipated	Issuing Agency
Non-wetland "Waters of the U.S."	404 Permit/401 Water Quality Certification; NPDES Permit.	USACE/RWQCB
Non-wetland "Waters of the State"	1602 Streambed Alteration Agreement.	CDFW
Ferris' goldfields	Contract Special Provisions; pre-construction surveys	Caltrans
California jewelflower	CESA 2081 Permit; Contract Special Provisions; pre-construction surveys	CDFW
California jewelflower, San Joaquin woollythreads	FESA, Section 7 BO; Contract Special Provisions; pre-construction surveys	USFWS
Western spadefoot, western pond turtle, coast horned lizard, silvery legless lizard	Contract Special Provisions; pre-construction surveys	Caltrans
Swainson's hawk	<i>California Fish and Game Code</i> ; Migratory Bird Treaty Act; Contract Special Provisions; pre-construction nesting surveys; construction timing; monitoring requirements.	CDFW
White-tailed kite	<i>California Fish and Game Code</i> ; Migratory Bird Treaty Act; Contract Special Provisions; pre-construction nesting surveys; construction timing; monitoring requirements.	CDFW
Burrowing owl	<i>California Fish and Game Code</i> ; Migratory Bird Treaty Act; Contract Special Provisions; pre-construction surveys; construction monitoring requirements.	CDFW
San Joaquin kit fox	FESA, Section 7 BO; Contract Special Provisions; pre-construction surveys; construction timing; monitoring requirements; contained water sources inaccessible to kit fox.	USFWS, CDFW

Table 24 (Continued)
Project Permits and Special Provisions

Potential Impact	Law/Permit Provisions Anticipated	Issuing Agency
San Joaquin kit fox, blunt-nosed leopard lizard, Tipton kangaroo rat, giant kangaroo rat, Nelson's [San Joaquin] antelope squirrel, Bakersfield cactus, California jewelflower, San Joaquin woollythreads, Hoover's woollystar, Kern mallow, Tulare pseudobahia, striped adobe lily, Bakersfield saltbush	Metropolitan Bakersfield Habitat Conservation Plan; payment of per-acre mitigation fee before expiration of the plan (i.e., 2019).	USFWS, CDFW, City of Bakersfield
Nesting birds/raptors	<i>California Fish and Game Code</i> ; Migratory Bird Treaty Act; Contract special provisions; vegetation removal outside the breeding season (February 1–August 31) or pre-construction survey.	USFWS and CDFW

5.1. Federal Endangered Species Act Consultation Summary

The project falls under the Metropolitan Bakersfield Habitat Conservation Plan, which was certified by all stakeholders in August 1993 (Thomas Reid Associates 1994). The City of Bakersfield and Kern County developed the Metropolitan Bakersfield Habitat Conservation Plan to acquire incidental take permits (PRT-786634), which would allow take of federally-listed species included in the Metropolitan Bakersfield Habitat Conservation Plan. The permits acquired include a permit under Section 10(a)(1)(B) of the Federal Endangered Species Act (hereafter referred to as a 10[a] permit).

The Metropolitan Bakersfield Habitat Conservation Plan was designed to offset impacts resulting from loss of habitat incurred through the authorization of otherwise lawful activity. The Metropolitan Bakersfield Habitat Conservation Plan covered 11 plant species and 7 wildlife species. Per the plan, payment of a one-time mitigation fee for each undeveloped acre impacted by the project would mitigate for all covered species. Although the Metropolitan Bakersfield Habitat Conservation Plan expired in 2014, the Incidental Take Permit has been extended until 2019, and this project was granted approval to mitigate using the plan.

Because Caltrans is not a signatory to the Metropolitan Bakersfield Habitat Conservation Plan, a Section 7 consultation pursuant to the Federal Endangered

Species Act was required between Caltrans and the U.S. Fish and Wildlife Service to request concurrence on special-status species impact determinations and avoidance, minimization, and mitigation measures proposed to offset any such impacts. A Biological Assessment was submitted to the U.S. Fish and Wildlife Service and a Section 7 formal consultation was conducted for project impacts on listed species (such as San Joaquin kit fox) that would be potentially impacted by the project.

The Section 7 consultation under the Federal Endangered Species Act between Caltrans and the U.S. Fish and Wildlife Service for the project is complete and a biological opinion has been issued. After the circulation of the Draft Environmental Impact Report/Environmental Impact Statement, Caltrans contacted the U.S. Fish and Wildlife Service to amend the Biological Opinion regarding minor changes to the project description. The amended Biological Opinion was approved by the U.S. Fish and Wildlife Service on February 24, 2015. During preparation of the San Joaquin Kit Fox Conceptual Strategy for the Thomas Roads Improvement Program, Caltrans consulted with the U.S. Fish and Wildlife Service on the approach for San Joaquin kit fox field surveys, potential project-specific and program-level effects of the Thomas Roads Improvement Program, and mitigation options for project-specific impacts. Section 2.4 provides a more detailed account of the consultation that has occurred to date.

5.2. Essential Fish Habitat Consultation Summary

The project would not impact any species regulated by the National Marine Fisheries Service; therefore, no consultation is necessary.

5.3. California Endangered Species Act Consultation Summary

The project falls under the Metropolitan Bakersfield Habitat Conservation Plan, which was certified by all stakeholders in August 1993 (Thomas Reid Associates 1994). The City of Bakersfield and Kern County developed the Metropolitan Bakersfield Habitat Conservation Plan to acquire a permit, which would allow take of state-listed species included in the Metropolitan Bakersfield Habitat Conservation Plan. Although the Metropolitan Bakersfield Habitat Conservation Plan expired in 2014, this project was granted approval to mitigate using the plan.

With implementation of avoidance and minimization measures, it is assumed that take of San Joaquin kit fox, as defined under the California Endangered Species Act, can

be avoided. Therefore, it would not be necessary to obtain an Incidental Take Permit or a Consistency Determination from the California Department of Fish and Wildlife for the project.

5.4. Wetlands and Other Waters Coordination Summary

A Jurisdictional Delineation Report for the biological study area is included as Appendix E. Caltrans will contact the U.S. Army Corps of Engineers, the California Department of Fish and Wildlife, and the Regional Water Quality Control Board to request a field verification meeting. Impacts on jurisdictional waters require preparation and processing of a U.S. Army Corps of Engineers Section 404 Permit, a Regional Water Quality Control Board Section 401 Water Quality Certification, a California Department of Fish and Wildlife Section 1602 Streambed Alteration Agreement, and the appropriate jurisdictional determination form approved by the U.S. Army Corps of Engineers.

The waterways in the biological study area are not subject to the National Wild and Scenic Rivers Act (16 U.S. Code 1271-1376), Section 10 of the Rivers and Harbors Act (33 U.S. Code 1251–1376), or the California Wild and Scenic Rivers Act (P.R.C. 5093.50 et seq).

5.5. Invasive Species

The project may include landscaping of portions of the right-of-way. Federal requirements prohibit planting of exotic species identified as “invasive” because seeds from invasive species could escape to natural areas and degrade the native vegetation.

The following avoidance and minimization measures will be required.

- Any landscape designs shall be submitted to Caltrans for review and approval by a qualified biologist during the project design phase. The review shall verify that no noxious weeds/invasive exotic plant species are in the proposed landscaping plan. If the plan contains noxious weeds/invasive species, the reviewing biologist shall recommend suitable substitutes.

5.6. Other

5.6.1. Discussion of Wildlife Movement

5.6.1.1. SURVEY RESULTS

The Kern River is a regional wildlife corridor in the biological study area and provides for wildlife movement through the Metropolitan Bakersfield Habitat Conservation Plan area to connect areas of open space between the northeastern focus area (the Metropolitan Bakersfield Habitat Conservation Plan reserve), the southwestern focus area (the Metropolitan Bakersfield Habitat Conservation Plan reserve), and the Kern Water Bank Habitat Conservation Plan (Habitat Conservation Plan) reserve. The canals in the biological study area are also used for wildlife movement, especially in the highly urbanized portions of the biological study area. A study of kit fox movement (City of Bakersfield and Caltrans 2007) identified the Carrier Canal and Friant-Kern Canal as movement corridors for the San Joaquin kit fox.

5.6.1.2. PROJECT IMPACTS

Wildlife has been found to move along linear habitat features (canals, railways, the Kern River corridor, roads), going from one patch of open space to another. Where the proposed roadway would bridge these features, it would not disrupt movement. However, if the proposed roadway would cross the linear features, this could disrupt the wildlife movement patterns in the biological study area. Wildlife attempting to cross the road may encounter a high potential for vehicle strikes on the new road.

In general, the biological study area occurs within a developed setting, which constrains wildlife movement to areas of open space that are connected mainly by existing canals. The proposed roadway design would bridge the Kern River (all alternatives), the Carrier Canal (Alternative B), and the Friant-Kern Canal (Alternatives A and C; Alternative B would avoid impacts to this canal), allowing wildlife movement to continue under the new roadway.

For most wildlife occurring in the biological study area, impacts on wildlife movement would be considered less than substantial. However, the San Joaquin kit fox may attempt to cross the new road; any mortality of this species related to vehicle strikes would be considered substantial because that could reduce the number or restrict the range of an endangered species.

5.6.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Caltrans shall include appropriate design and structural elements for the project, such as permeable fencing or exclusionary fencing/undercrossing structures (i.e., culverts),

depending on roadway design, to facilitate safe kit fox crossing and to reduce the potential for kit fox vehicular-related mortality. The location and specifications of structural elements (such as crossing structures and exclusionary/ permeable fencing) shall be developed during the design phase by Caltrans for review and approval by the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife.

5.6.1.4. COMPENSATORY MITIGATION

With the incorporation of the avoidance and minimization measures listed above in Section 5.6.1.3, no compensatory mitigation would be necessary.

5.6.2. Discussion of Night Lighting

5.6.2.1. SURVEY RESULTS

The western mastiff bat, burrowing owl, and San Joaquin kit fox are known or have potential to occur in and adjacent to the biological study area; these species could be sensitive to night lighting.

5.6.2.2. PROJECT IMPACTS

Night lighting during construction or operation of the project could spill over into the adjacent open space and could have adverse effects on the foraging activities of nocturnal species (such as the San Joaquin kit fox, burrowing owl, bats, and other small mammals) and may also increase predation on small mammals. Therefore, the project's night lighting may affect nocturnal wildlife, especially along the Kern River. However, with incorporation of avoidance and minimization measures listed above, the effects of night lighting would be considered less than substantial.

5.6.2.3. AVOIDANCE AND MINIMIZATION EFFORTS

Night work shall be minimized or avoided. Additional avoidance, minimization and mitigation measures, as determined by a qualified biologist, may be required if night work cannot be avoided.

Permanent night lighting shall be directed away from natural open space areas. Caltrans shall submit lighting plans for permanent light fixtures to a qualified biologist for review during the project design phase to ensure that lighting has been reduced to the extent practicable.

5.6.2.4. COMPENSATORY MITIGATION

With the incorporation of the avoidance and minimization measures listed above, no mitigation would be necessary.

5.7. Construction Monitoring

Before initial vegetation clearing, the contractor shall install fencing or flagging to delineate the maximum limits of disturbance acceptable to and under the supervision of a qualified biologist. The biological monitor shall also monitor the implementation of standard conditions and the minimization measures previously identified in Sections 4.0 and 5.0:

Invasive Species: In compliance with the Executive Order on Invasive Species (Executive Order 13112) and subsequent guidance from the Federal Highway Administration, Caltrans shall not use species listed as invasive as part of landscaping erosion-control measures. In areas of particular sensitivity, extra precautions shall be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

Jurisdictional Delineation: Prior to the initiation of any grading and/or construction-related activity within 50 feet of areas under the jurisdiction of the U.S. Army Corps of Engineers, the Regional Water Quality Control Board, and/or the California Department of Fish and Wildlife, the contractor shall install fencing, flagging, lath and rope, or another device to delineate the jurisdictional areas that would not be affected by the project. The purpose of the fencing is to protect the jurisdictional areas from inadvertent disturbance. Placement of the fencing shall be done under the supervision of a qualified biological monitor.

Western Spadefoot, Western Pond Turtle, Coast Horned Lizard, Silvery Legless Lizard: A pre-construction survey for western spadefoot, western pond turtle, coast horned lizard, and silvery legless lizard shall be conducted by a qualified biologist within the proposed impact area before construction. If these species are observed on or adjacent to the impact area and are in imminent danger from construction activities, a qualified biologist shall capture and relocate individuals to an appropriate location outside the impact area. Suitable habitat (such as pools for western spadefoot tadpoles or pond turtles) into which to relocate the individuals will be identified by the biologist and approved by the California Department of Fish and Wildlife before individuals are translocated. The biologist conducting the surveys shall hold necessary permits to handle the species. If animals are not in imminent danger, they shall be allowed to leave the impact area on their own.

White-tailed Kite: A pre-construction survey for nesting raptors shall be done by a qualified biologist within the limits of project disturbance. Any active nest found

during survey efforts shall be mapped on the construction plans. If nesting activity is present, the active site shall be protected until nesting activity ends to ensure compliance with Section 3503.5 of the *California Fish and Game Code*.

Nesting activity for raptors in the region normally occurs from February 1 to August 31. If no active nests are found, no further mitigation would be required. Results of the surveys shall be provided to the California Department of Fish and Wildlife.

To protect any nest site, the following restrictions on construction would be required between February 1 and August 31 (or until nests are no longer active, as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 300 feet in any direction from any occupied nest and (2) access and surveying shall be restricted within 200 feet of any occupied nest. Any encroachment into the 300-/200-foot buffer area around the known nest shall only be allowed if it is determined by a qualified biologist that the proposed activity shall not disturb the nest occupants. Construction during the non-nesting season can occur only at the sites if a qualified biologist determines that fledglings have left the nest.

Burrowing Owl: A pre-construction survey shall be conducted by a qualified biologist in accordance with the survey requirements detailed in the California Department of Fish and Game's October 17, 1995 *Staff Report on Burrowing Owl* no more than 30 days before initial ground-disturbing activities (CBOC 1993). Any active burrow found during pre-construction survey efforts shall be mapped and provided to the construction foreman. If no active burrows are found, no further mitigation shall be required.

No disturbance shall occur within 160 feet of occupied burrows during the non-breeding season (September 1 through January 31) or within 250 feet during the breeding season (February 1 through August 31).

If owls must be moved away from the disturbance area, passive relocation is preferable to trapping. Relocation shall be implemented only during the non-breeding season by a qualified biologist and would occur in coordination with the California Department of Fish and Wildlife. Owls shall be excluded from burrows in the immediate impact zone by installing one-way doors in burrow entrances. One-way doors shall be left in place for 48 hours to ensure owls have left the burrow before excavation.

An effort shall be made to preserve foraging habitat contiguous with occupied burrow sites for each pair of breeding burrowing owls or for every single unpaired resident bird.

Compensatory mitigation for the San Joaquin kit fox (discussed below) shall also mitigate for the loss of burrowing owl habitat. Additional compensatory mitigation for burrowing owls shall be required only if burrowing owls found within 250 feet of construction activities during pre-construction surveys cannot be avoided during construction. In this event, potential compensatory mitigation may include purchase of suitable habitat through the payment of fees to the Metropolitan Bakersfield Habitat Conservation Plan Trust Group for this species or construction of artificial burrows in City sumps similar to the City Sump Habitat Program for the San Joaquin Kit Fox.

Loggerhead Shrike and Tricolored Blackbird: A qualified biologist shall survey within the limits of project disturbance for the presence of any nesting locations. Any active nest found during survey efforts shall be mapped and provided to the construction foreman. If no active nests are found, no further mitigation would be required.

If nesting activity is present, the active site shall be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the California Fish and Game Code and the California Endangered Species Act for the tricolored blackbird. Nesting activity for birds in the region normally occurs from February 1 to August 31. To protect any nest site, the following restrictions on construction are required between February 1 to August 31 (or until nests are no longer active, as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 300 feet in any direction from any occupied nest and (2) access and surveying shall be restricted within 200 feet of any occupied nest. Any encroachment into the 300-/200-foot buffer area around the known nest shall be allowed only if a qualified biologist determines that the proposed activity will not disturb the nest occupants. If nesting tricolored blackbirds are observed, compensatory mitigation may be required.

Western Mastiff Bat: During construction, when nightwork is required, lighting during the early evening twilight hours adjacent to open space areas shall be minimized or avoided to the greatest extent possible. Permanent night lighting for the project shall be directed away from natural open space areas.

Swainson's Hawk: Tree removal within 500 feet of non-native grassland, agricultural areas, and detention basins shall occur outside the Swainson's hawk nesting season. If

construction were initiated during the Swainson's hawk nesting season (February 1 to August 31), a pre-construction survey for Swainson's hawk nests shall be conducted before construction activities. A qualified biologist shall survey within the limits of the biological study area and within a 0.5-mile radius around the biological study area for the presence of an active nest in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California, Central Valley*. Any active nest found during survey efforts shall be mapped and provided to the construction foreman. If a Swainson's hawk is nesting within 0.5 mile of the proposed impact area, the California Department of Fish and Wildlife shall be consulted to evaluate the potential for disturbance of the nesting birds during construction and to approve measures that would avoid impacts on the active nest; authorization to proceed shall be obtained before work starts. The active site shall be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the California Fish and Game Code and the California Endangered Species Act. If no active nests are found, no further mitigation would be required. Results of the surveys shall be provided to the California Department of Fish and Wildlife.

To protect an active nest site, the following restrictions on construction are required between February 1 and August 31 (or until nests are no longer active, as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 500 feet in any direction from any occupied Swainson's hawk nest and (2) access and surveying shall be restricted within 300 feet of any occupied Swainson's hawk nest. Any encroachment into the 500-/300-foot buffer area around the known nest shall be allowed only if the qualified biologist determines that the proposed activity will not disturb the nest occupants.

San Joaquin Kit Fox: Measures have been developed from standard recommendations described in the U.S. Fish and Wildlife Service's biological opinion. See Section 4.4.16.2 for measures to be implemented prior to and during construction.

- Construction activities shall adhere to the standard construction and operational requirements, as described in the U.S. Fish and Wildlife Service's *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011b) and the Biological Opinion (USFWS 2013).
- No less than 30 days but no more than 60 days before road construction, a U.S. Fish and Wildlife Service-approved qualified biologist shall conduct a

survey for kit fox dens within the project footprint and within 200 feet of the construction footprint, including utility relocations. A letter report and map of known and potential kit fox dens shall be submitted to the U.S. Fish and Wildlife Service prior to the start of ground-disturbance and/or construction activities. Repeat clearance surveys for kit fox shall be conducted no more than 14 days before construction or after any delays in construction of over 2 weeks. Any new kit fox dens identified since completing the 60-day survey shall be reported to the U.S. Fish and Wildlife Service in a letter report and map. If no new kit fox dens are identified, an internal record shall be maintained that includes the survey date, the designated biologist conducting the survey, and the general survey findings. The records shall be submitted to the U.S. Fish and Wildlife Service upon request.

- Disturbance of all San Joaquin kit fox dens shall be avoided to the maximum extent practicable. If known dens or potential dens are detected in the project footprint during 60-day and/or 14-day pre-construction clearance surveys, Caltrans shall request agency permission to monitor and excavate dens that would be affected directly by the project and cannot be avoided; active dens shall not be excavated during the natal season (January 1–June 30). The U.S. Fish and Wildlife Service-approved biologist shall monitor potential dens for three consecutive nights using tracking medium and/or remote sensor camera and submit monitoring results in a letter report to the U.S. Fish and Wildlife Service. The biologist shall oversee the hand excavation of dens that have been determined to be vacant following approval by the U.S. Fish and Wildlife Service; results of the den excavation and exclusion activities shall be reported to the U.S. Fish and Wildlife Service in a letter report. Dens found within 200 feet of project construction but not directly affected by construction activities shall be monitored and buffered from construction by an exclusion zone around dens, as measured outward from the entrance or cluster of entrances of each den. The biologist shall place flagged stakes in a 50-foot radius buffer around any potential or atypical den. The biologist shall place a fence (e.g., wooden posts connected with caution tape, orange construction cones, orange construction fencing with a mesh size less than 2 inches in diameter [to prevent kit fox from becoming entangled in the fencing] with gaps every 50 feet, or other fencing approved by the U.S. Fish and Wildlife Service as long as it has openings for entry/exit of kit fox and keeps

humans and equipment out) 100 feet from a known den. Fencing/flagging will be maintained until all construction-related disturbances have been terminated. At that time, all fencing/flagging shall be removed to avoid attracting subsequent attention to the dens. Caltrans shall immediately notify the U.S. Fish and Wildlife Service if a natal den is found, either within the project footprint or within 200 feet of the project footprint. The biologist shall submit results of den excavation and exclusion in a letter report to the U.S. Fish and Wildlife Service.

- The U.S. Fish and Wildlife Service-approved biologist shall conduct a worker environmental awareness program for all construction crews before ground-disturbance activities. The purpose of this training is to inform construction crew members of permit terms and conditions and of the potential for kit fox to occur at a site and be affected by construction activities, how to minimize effects on the species, and the penalties for non-exempted take. The training shall include, at a minimum, (1) special-status species identification and a description of suitable habitat for the species; (2) avoidance of environmentally sensitive areas; and (3) measures to implement in the event that this species is found during construction. The training shall be repeated to all new crew members working in kit fox habitat. Following the training, crew members shall sign an attendance sheet stating that they attended the training and understand the protective measures and construction restrictions. Training materials and records of attendees shall be submitted to the U.S. Fish and Wildlife Service.
- The U.S. Fish and Wildlife Service-approved biologist shall monitor road construction activities on a daily basis. The biologist shall verify that construction complies with measures in the biological opinion (USFWS 2013). The biologist shall maintain a log of daily monitoring notes that can be summarized and transmitted to the U.S. Fish and Wildlife Service at its request.
- In areas of known kit fox activity, the project right-of-way shall be fenced with permeable fencing. In high-density residential areas, the project right-of-way shall be fenced with permanent exclusionary fencing. For a permeable fencing design, one or a combination of the following three design options shall be adopted to provide kit fox with movement opportunities: (1) elevating the bottom of the fence 5 inches above ground to allow unobstructed movement by kit foxes under the fence; (2) installing

ground-level 8-inch-wide by 8-inch-wide gaps no more than 100 feet apart for the length of the fence, which would allow kit fox movement at regular intervals along the right-of-way; and (3) installing fencing with a minimum mesh size of 3½ by 7 inches, preferably 5 by 12 inches, which would allow unlimited movement by kit fox through the fence.

- If landscaping is required, project landscaping shall be designed to allow unobstructed visibility for kit foxes and to provide opportunities for movement across the roadway. Curbed median and roadside landscaping shall be planted in 1 of 2 alternative strategies: selecting plants that do not exceed 6 inches tall at maturity and/or creating gaps no less than 4 feet wide every 12 feet in areas landscaped with trees and shrubs.
- Upon completion of project construction, all areas subject to temporary ground disturbance, including storage and staging areas, shall be restored to original grade and contour. Revegetation experts shall determine the appropriate methods and plant species used to revegetate these areas on a site-specific basis.
- To minimize opportunistic predatory effects to the San Joaquin kit fox, the City and Caltrans shall condition contracts with contractors to require that trash be removed at least once daily from project areas and disposed of offsite so as not to attract predator species like coyotes and bobcats to the project area.
- The City and Caltrans shall condition contracts with contractors to require contained water sources, which are inaccessible to San Joaquin kit fox (e.g., elevated water trucks), to be used for dust control and other construction water activities.
- The U.S. Fish and Wildlife Service-approved biologist shall meet weekly with the resident engineer and contractor to review the week's upcoming ground-disturbing activities, including any possible changes from the project as analyzed in the biological opinion and the avoidance and minimization measures. These meetings shall be documented and reported to Caltrans every two weeks, Caltrans will in turn report to the U.S. Fish and Wildlife Service every two weeks. Should the incidental take exceed the amount agreed upon in the Biological Opinion, Caltrans must immediately reinstate formal consultation.

- If incidental take in the form of harassment, harm, injury, or death is likely, Caltrans shall immediately contact the U.S. Fish and Wildlife Service to report the encounter. If an injured or dead individual of a listed species is found, Caltrans shall follow the steps outlined in the Salvage and Disposition of Individuals section of the Biological Opinion.
- A post-construction report detailing compliance with the project design criteria and proposed conservation measures shall be provided to the U.S. Fish and Wildlife Service within 60 calendar days of completion of the project. The report shall include: (1) dates of project groundbreaking and completion; (2) pertinent information concerning success of the project in meeting the conservation measures; (3) an explanation of failure to meet such measures, if any; (4) known project effects on San Joaquin kit fox, if any; (5) observed instances of injury to or mortality of the San Joaquin kit fox, if any; (6) the number of dens lost, if any; and (7) any other pertinent information. Any new sightings of the San Joaquin kit fox or its dens shall be reported to the California Natural Diversity Database.
- Caltrans shall install modified k-rail barriers that facilitate San Joaquin kit fox movement and passage across the roadways. Openings in the barriers shall be spaced every seven segments of k-rail; segments are 20-feet long, so intervals shall be spaced approximately every 140-feet. One, or a combination, of two design options shall be implemented. Designs include:
 - A Modified Type K segment with one 8-inch diameter hole cast or bored into a typical rail segment.
 - A Type L passageway that off-sets a segment of k-rail via a gap measuring between 8-inches and 5-feet.

Caltrans acknowledges that the aforementioned designs are only temporary solutions for addressing the issues of roadway permeability and wildlife passage; over the long-term, Caltrans will commit to conducting crash-test and safety studies on alternative design options in order to provide the most effective solutions for addressing San Joaquin kit fox movement across the roadscape.

Chapter 6. Preparers

Amber Oneal Heredia, Senior Project Manager/Ecologist. Master of Science, Biology, University of California, Riverside; 17 years experience in ecology and environmental documentation. Contribution: Prepared the Natural Environment Study.

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Sheryl A. Kristal, Word Processor. General Studies, Golden West College; 9 years of word processing experience. Contribution: Formatted the Natural Environment Study.

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Appendix A Segment 2 – Revalidation Memo

Centennial Corridor Project

Segment 2 – Westside Parkway Project

Biological Resources Technical Memorandum

December 2011

1.0 Purpose of the Technical Memorandum

In January 2007, the Westside Parkway Final Environmental Assessment (EA) and Environmental Impact Report (EIR) was completed and approved by the Federal Highway Administration (FHWA), the California Department of Transportation (Caltrans), and the City of Bakersfield (City). This document evaluated environmental impacts for the proposed 8.1-mile-long east-west freeway that extends from Heath Road at Stockdale Highway to a point near State Route (SR) 99 at Truxtun Avenue in Bakersfield and an unincorporated portion of Kern County. Since approval of the EA/EIR, a number of design refinements have been necessary and re-validation reports were prepared to assess the potential environmental impacts associated with the design refinements. As part of the Centennial Corridor Project, additional design refinements to the Westside Parkway are proposed. These are discussed in Section 2.0, Change in Project Design.

This Biological Resources Technical Memorandum was prepared to assess the changes in the environmental setting; the circumstances; the impacts; and the avoidance, minimization or mitigation measures resulting from the project's design refinements as compared to the approved 2007 EA/EIR.

2.0 Changes in Project Design

The Westside Parkway is under construction. Incorporation of the road as part of the Centennial Corridor would require minor modifications to the approved design plans. This would include the addition of auxiliary lanes and changes to ramps. However, the impacts associated with these improvements are being addressed as part of Segment 1. This technical memorandum is focused on the potential impacts associated with the designation of the roadway as SR 58 and providing the connection to the existing SR 58 freeway, SR 99, and ultimately to Interstate (I) 5.

3.0 Changes in Environmental Setting

The Biological Study Area (BSA) for the Revalidation Memo includes 500 feet on each side of the proposed alignment (Figures 1A and 1B).

One species has been added to the List of Threatened or Endangered species provided by the U.S. Fish and Wildlife Service (USFWS) since the EA/EIR was prepared in 2006: southwestern willow flycatcher (*Empidonax traillii extimus*) (Attachment 1). This species was not addressed in the June 2008 or December 2009 (revised July 2010) revalidation memos.

Southwestern willow flycatcher inhabits riparian forest habitats typically dominated by willows with dense understory vegetation. Although 3.35 acres of Great Valley/cottonwood riparian forest occurs within Segment 2 of the BSA, riparian vegetation along this portion of the Kern River is not dense enough to support this species. Therefore, southwestern willow flycatcher is not expected to occur in Segment 2 of the BSA.

4.0 Changes in Environmental Circumstances

Designating the Westside Parkway as SR 58 and creating a connection to the existing SR 58 freeway, SR 99, and ultimately to I-5 would cause no changes in environmental circumstances pertaining to biological resources. The designation as SR 58 would not increase the roadway's footprint; no habitat would be disturbed as a result of the change in designation (Figures 2A and 2B).

5.0 Changes in Environmental Impact

Designating the Westside Parkway as SR 58 and creating a connection to the existing SR 58 freeway, SR 99, and I-5 have the potential to increase San Joaquin kit fox (*Vulpes macrotis mutica*) mortality by vehicle strikes. Vehicle strikes are considered an indirect effect as a result of the proposed project. Currently, San Joaquin kit fox is exposed to the traffic along existing roadways. The transfer of the Westside Parkway to the State Highway System is expected to increase the traffic volume on the roadway. Crossing a roadway carrying more traffic may result in an unintentional incremental increase in vehicle-related mortality.

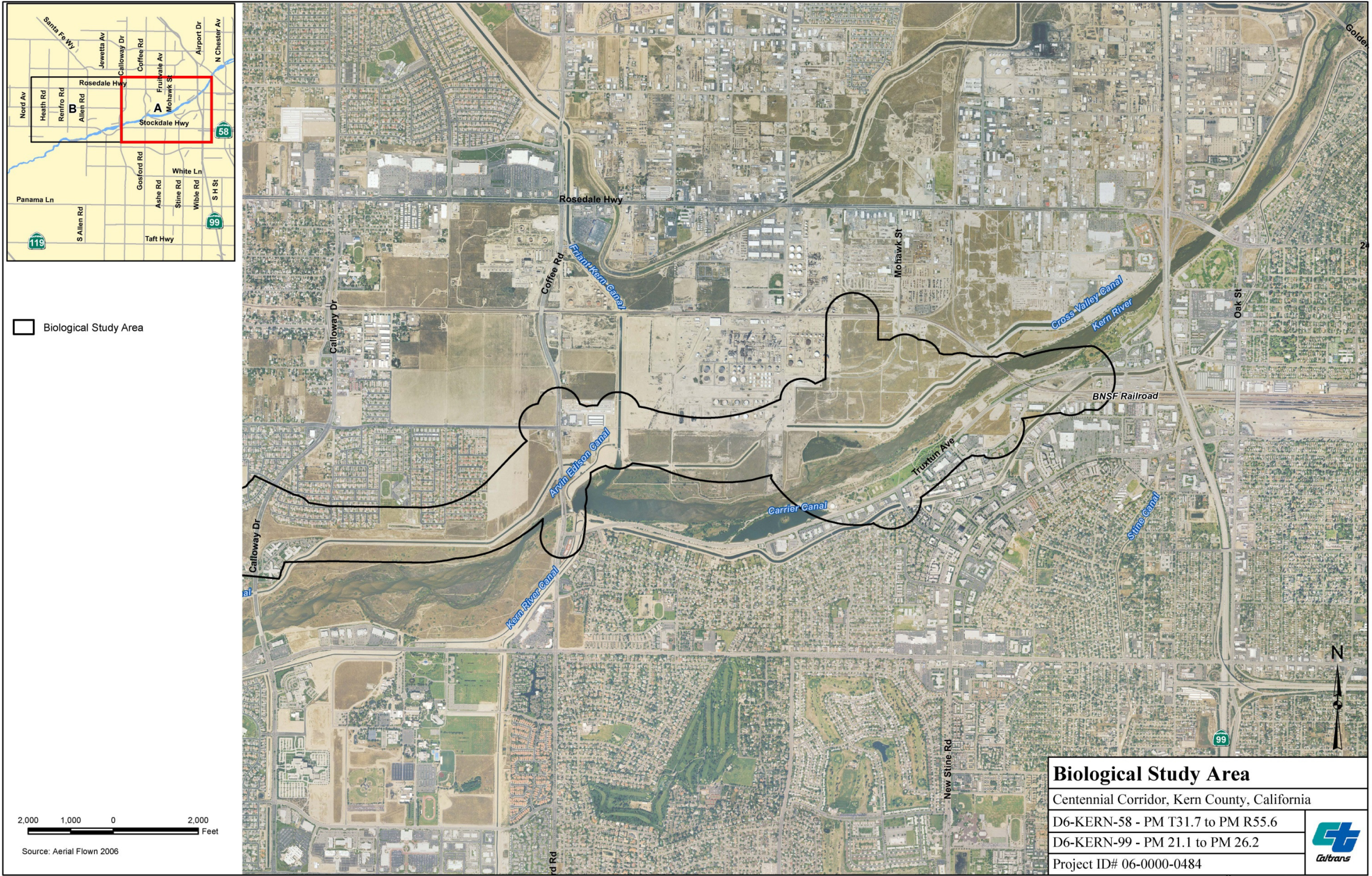
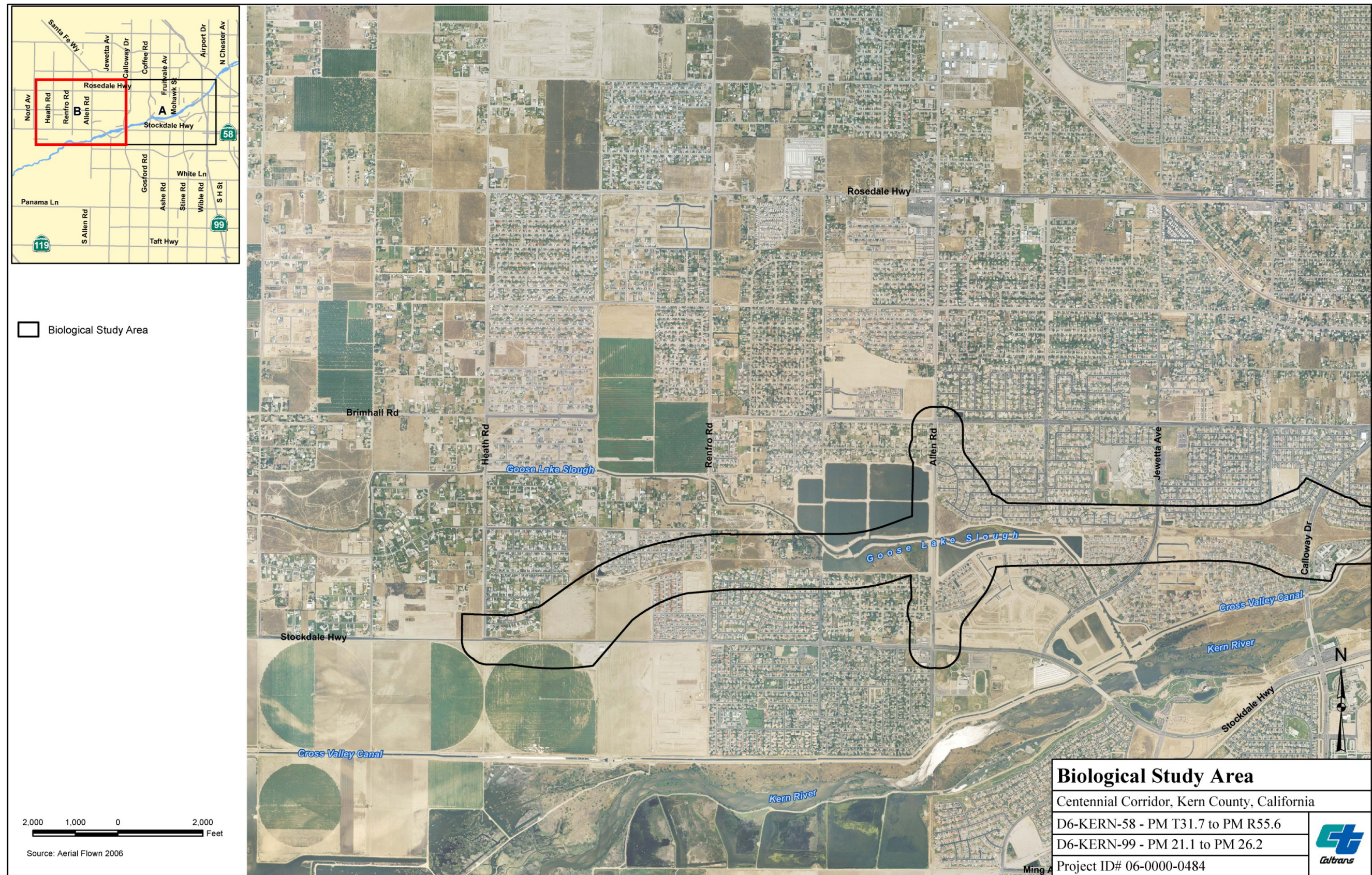


Figure 1A



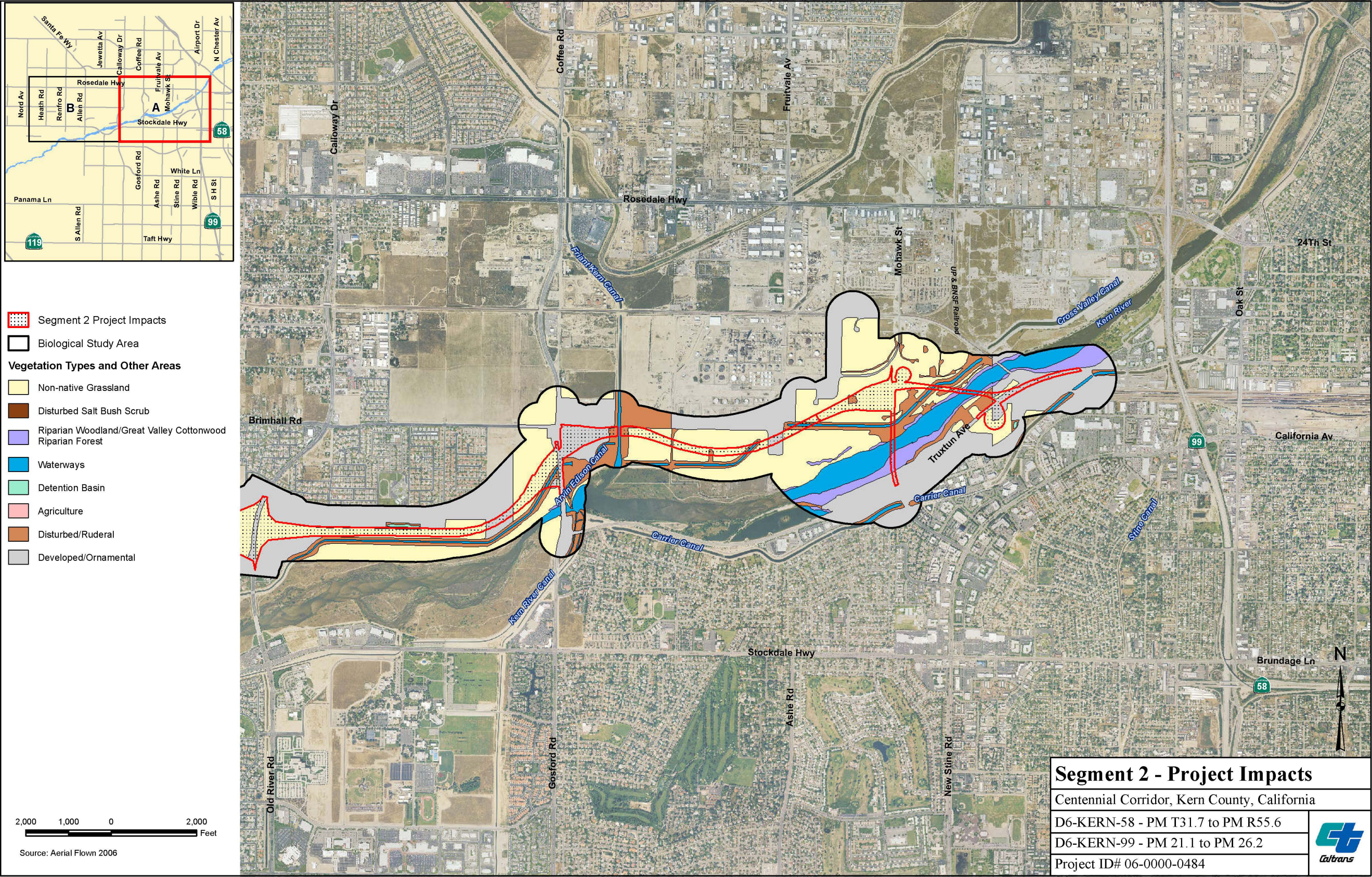


Figure 2A

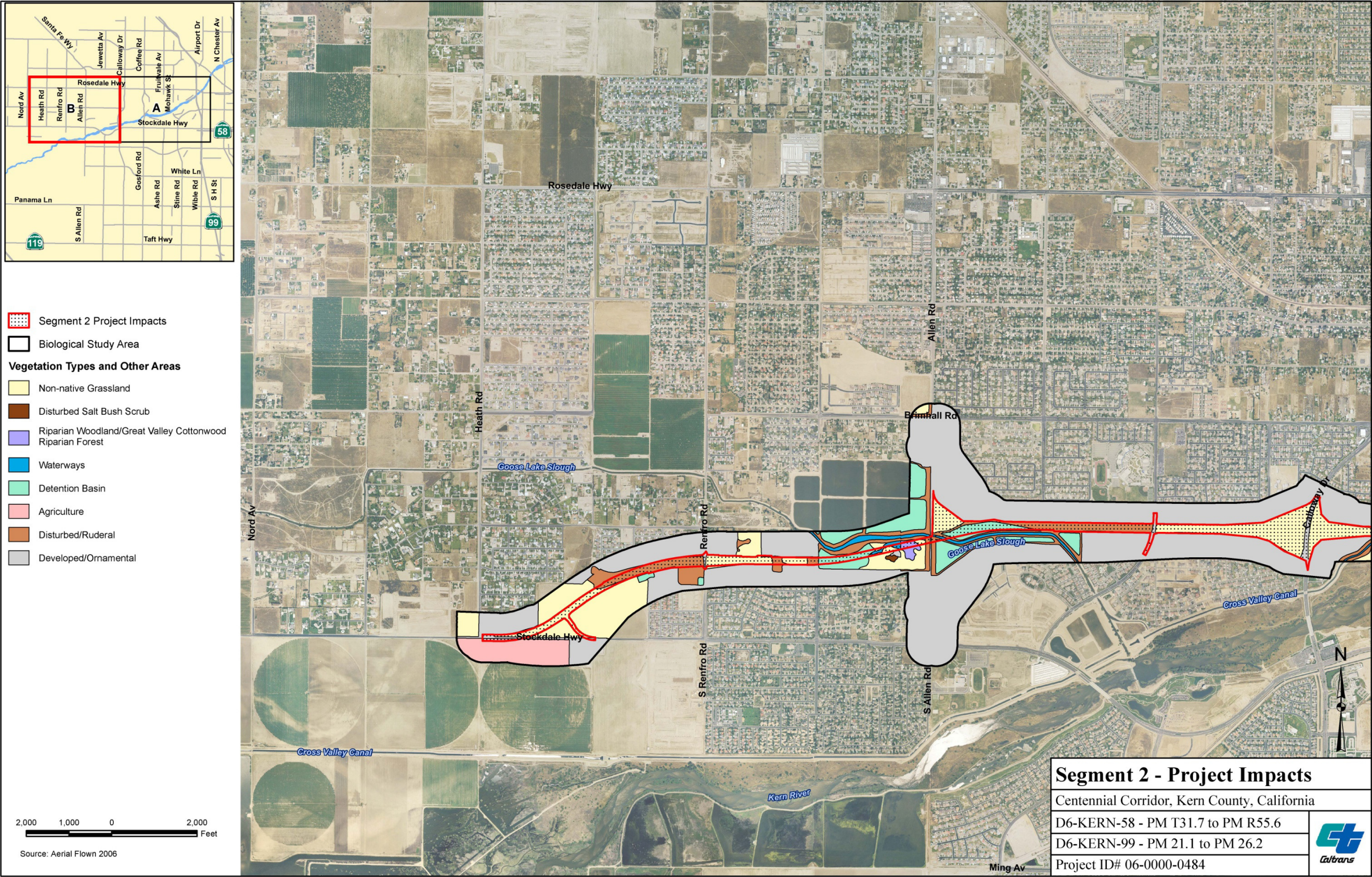


Figure 2B

